A COMPARISON OF ENGAGEMENT AND OVERALL INSTITUTIONAL SATISFACTION BETWEEN CHINESE INTERNATIONAL AND DOMESTIC STUDENTS IN THE UNITED STATES

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To my mother Ping and father Zhenxu! Thank you for being my best friends since day one.

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A COMPARISON OF ENGAGEMENT AND OVERALL INSTITUTIONAL SATISFACTION BETWEEN CHINESE INTERNATIONAL AND DOMESTIC STUDENTS IN THE UNITED STATES

With the exponential growth in international students pursing postsecondary degrees in the U.S., an increasing number of faculty members and staff have raised questions and concerns about supporting international students' academic engagement. Although prior studies have explored the educational experiences of international students in the United States (U.S.), few have investigated international student engagement at four-year institutions. Little is known about the engagement and overall institutional satisfaction of Chinese international students (CISs), the top represented international student group in the U.S., and how their experiences compare to those of U.S. domestic students (U.S. students). In this quantitative study, I compared CIS and U.S. student engagement in effective learning strategies (LS), collaborative learning (CL), and student-faculty interaction (SF), which may be influenced by culture, at U.S. four-year colleges and universities. I also examined the relationship between LS, CL, SF, and overall institutional satisfaction, and compared how such relationships vary between CISs and U.S. students. Finally, I investigated the variations of LS, CL, SF, and overall institutional satisfaction between first-year and senior CISs, and I explored whether class standing moderates the effect of country of origin on LS, CL, SF, and overall institutional satisfaction. The data was from the 2015 administration of the National Survey of Student Engagement, a large-scale and multi-institutional survey. This study contributes an important dimension to the existing literature regarding CIS engagement in U.S. higher education. Using Hofstede's (2001) Dimensions of Culture (e.g., individualism vs. collectivism, uncertainty avoidance, and power distance) as the

conceptual grounding, this study helps CISs and U.S. students establish a mutual understanding of each other's engagement in LS, CL, and SF. This study also provides recommendations and implications to faculty and practitioners for supporting the cross-cultural integration and mutual engagement of CISs, even the entire international student group, and U.S. students through college teaching, learning, student advising, and co-curricular activities.

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Table of Contents

Chapter One: Introduction

In the book *Understanding the International Student Experience*, Montgomery (2010) claimed that "internationalization is part of the contextual background to the spread of international students in higher education across the globe" (p. 3). The numbers of international students attending U.S. colleges and universities have dramatically increased during the 21st century. According to the 2016 Open Doors Report, the number of international students at colleges and universities in the U.S. reached a record high of 1,043,839 in the 2015-16 academic year, an increase of 7% from 2014-15 (974,926) (Institute of International Education, 2016). This 7% increase was slightly lower than the growth rate of international students in the 2014-15 academic year, which was 10%—the highest proportional increase since the 1978-79 academic year. Notably, the number of international students in the U.S. reached a record of over one million for the first time during the 2015-16 academic year (Institute of International Education, 2016). Among the 20 million students who were enrolled at U.S. colleges and universities, international students represented nearly 5% of the entire postsecondary population in the 2015-16 academic year, in comparison with 4% in the 2014-15 academic year. Among international students, 78% were degree seekers. Remarkably, the number of international students has increased by 91% since 2000 (Institute of International Education, 2016).

Among the entire international student enrollment at U.S. campuses in the 2015-16 academic year, students from China, India, Saudi Arabia, and South Korea represented 60% of international students (China: 32%; India: 16%; Saudi Arabia: 6%; and South Korea: 6%) (Institute of International Education, 2016). It is worth noting that China, India, and South Korea have ranked in the top three leading places of origin every year from 2012 to 2015. The proportion of CISs has been the highest among the sub-groups of international students enrolled

in U.S. higher education since 2006 (Institute of International Education, 2016). The number of Saudi Arabian students in the U.S. surpassed the number of South Korean students in the 2015-16 academic year, moving up to third in the ranking of top places of origin of international students (Institute of International Education, 2016).

The number of CISs in the U.S. increased from 304,040 in the 2014-15 academic year to 328,547 in the 2015-16 academic year, an 8% increase (Institute of International Education, 2016). In the 2014-15 academic year, the number of Chinese undergraduate students studying in the U.S. outnumbered Chinese graduate students for the first time (Institute of International Education, 2015). Due to a large portion of CISs in U.S. colleges and universities, an increasing number of faculty members and staff have encountered a different demographic of students than they are used to, from students with different learning preferences to students with different levels of understanding about U.S. culture. Therefore, understanding CIS engagement, learning preferences, and satisfaction, and comparing CIS educational experiences with those of U.S. students, has become increasingly important for scholars and practitioners in U.S. higher education.

Overview of Dissertation

This dissertation aimed to compare CIS and U.S. student usage of effective learning strategies, collaborative learning, and student-faculty interaction; it explored the relationship between these three engagement activities and students' overall institutional satisfaction; and examined how such relationships vary between CISs and U.S. students. Chapter One began with the problem statement and the purpose of this study. After presenting my research questions, I described the significance of the study and defined key concepts. Chapter Two started with a review of the scholarly literature related to internationalization in U.S. higher education. Then,

the literature review focused on international students' educational experiences and student engagement with academic life in the U.S., specifically concentrating on students' learning strategies, collaborative learning, and student-faculty interaction. This was followed by a discussion of the conceptual groundings of this study in terms of the impact of culture on student engagement and learning. The chapter presented a set of hypotheses of findings and justification of those hypotheses, and then concluded with a discussion of existing gaps in the current literature and an explanation of how this dissertation addressed those gaps. Chapter Three illustrated the methodology of the dissertation, such as the data source, measures, sampling methods, and data analyses. Justification of the data analysis method I chose was presented. Chapter Three also included descriptive tables of samples. The end of the chapter contained the limitations of the study overall. After a presentation of the study's findings and a comparison between the findings and the hypotheses in Chapter Four, the final chapter contained ideas or suggestions for future studies as well as potential implementations of and recommendations for future practices.

Problem Statement

As more and more international students, especially CISs, pursue degrees at colleges and universities in the U.S., international students' educational experiences have attracted a fairly large amount of attention from faculty members and staff. However, many international students are underserved at many colleges and universities, either because of university representatives' lack of understanding about their international students' educational experiences, or due to insufficient resources and support being provided by institutions for international students. For international students, studying in a foreign country brings challenges in several areas of the collegiate experience (Zhao, Kuh, & Carini, 2005). For U.S. colleges and universities, simply

enrolling international students is not enough to ensure their academic success and development. It is important for colleges and universities to make efforts to serve, retain, and graduate international students (Byrd, 1991). Hence, a deeper understanding of CIS engagement in U.S. colleges and universities is strongly necessary. Understanding CIS engagement in U.S. colleges and universities will effectively help faculty members and staff accommodate CIS unique academic needs, and then promote their outcomes in college.

Among the numerous studies which exist about CIS overseas educational experiences, only a few studies have examined undergraduate CIS educational experiences in the U.S. context (e.g., Chen & Ross, 2015; Cheng & Erben, 2012; Hsieh, 2007; Ross & Chen, 2015; Su & Harrison, 2016; Valdez, 2015; Wan, 1999; Yan & Berliner, 2011, 2011; Ye, 2006; Yuan, 2011). A number of prior studies have explored CIS educational experiences in Australia (Edwards, 2008; Ramsay, Barker, & Jones, 1999), Canada (Beres & Woloshyn, 2017; Zhou, Knoke, & Sakamoto, 2005), New Zealand (Holmes, 2004, 2006), and the United Kingdom (e.g., Chan, 1999; De Vita, 2001; Gao, 2006; Li, Chen, & Duanmu, 2010; Mathias, Bruce, & Newton, 2013). U.S. higher education is well known for its diverse student population and unique education system. Though studies have explored general international student engagement in the U.S. context (Zhao, Kuh, & Carini, 2005; Korobova, 2012), little is known about CIS engagement in U.S. colleges and universities, especially regarding their engagement in learning strategies, collaborative learning, and student-faculty interaction, the key indicators of engagement used in this study.

Specifically, newer understandings of CIS educational experiences in U.S. four-year colleges and universities is sorely needed. Among prior studies about CIS educational experiences in U.S. colleges and universities, a large portion addressed students' experiences in

short-term exchange programs or language training programs (Neuby, 2012; Huang & Brown, 2009; Huang, 2005, 2006), rather than students' longer-term experiences at four-year institutions. Moreover, many studies on CIS educational experiences were conducted during the 1980s or 1990s (Fingar & Reed, 1981; Huang, 1997; Martinsons & Martinsons, 1996; Wan, 1999; Yee, 1989); these characteristics of the relevant research literature means our understanding about these educational experiences is likely out of date.

Little is known about CIS overall institutional satisfaction in the U.S. Research has shown that students' commitment to degree completion and to the institution are significantly related to students' overall institutional satisfaction (Pascarella, Smart, & Ethington, 1986). A better understanding of international students' satisfaction with the college experience can help faculty members and staff provide sufficient support and resources to international students. Zhao, Kuh, and Carini (2005) compared international and U.S. student engagement in effective educational practices, self-reported gains, and satisfaction. They used data from the 2001 National Survey of Student Engagement (NSSE), which measured the time and energy that college students spend participating in academic and co-curricular activities. When they examined the variation of student satisfaction between international students and U.S. students, Zhao, Kuh, and Carini (2005) found that both first-year and senior international students had lower levels of satisfaction with their overall college experiences than did their U.S. counterparts. Nevertheless, the relationship between students' learning strategies, collaborative learning, and student-faculty interaction, and students' overall institutional satisfaction remains unknown, and therefore, more knowledge is needed regarding how these relationships vary between CISs and U.S. students.

Building on Zhao, Kuh, and Carini's (2005) study, Korobova (2012) used the 2008 administration of NSSE data to compare student engagement, satisfaction, and academic success between international students and U.S. students. Korobova (2012) found a significant relationship between international students' satisfaction with their collegiate experiences and effective educational practices, such as the level of academic challenge, student-faculty interaction, and supportive campus environment. However, little is known about the relationship between CIS overall institutional satisfaction with their engagement activities, such as utilizing effective learning strategies, collaborative learning, and student-faculty interaction.

Purpose of the Study

I aimed to obtain a deeper understanding of CIS engagement that associates with teaching and learning activities and behaviors in U.S. colleges and universities; I also aimed to show how this engagement may differ from that of U.S. students. Student engagement reflects the time and energy students devote to academic and co-curricular activities, which is closely related to student development and gains (Kuh, 2003). Based on existing studies comparing student engagement between international and U.S. students (Zhao, Kuh, & Carini, 2005; Korobova, 2012), I specifically explored how student engagement varies between CISs and U.S. students in learning strategies, collaborative learning, and student-faculty interaction. In addition, I aimed to explore the relationship between CIS learning strategies, collaborative learning, student-faculty interaction, and their overall institutional satisfaction. Finally, I investigated how such relationships may vary not only between CISs and U.S. students, but also between first-year and senior CISs.

This study focuses on CIS and U.S. student engagement in learning strategies, collaborative learning, and student-faculty interaction for two reasons. First, learning strategies,

collaborative learning, and student-faculty interaction are not only closely related to student learning and college teaching activities and behaviors, but they also reflect students' interactions with salient persons associated with their learning, such as peer students and faculty members. In other words, this study examined the intrinsic and extrinsic elements that influence students' learning on a daily basis. Second, learning strategies, collaborative learning, and student-faculty interaction may be influenced by culture, and may vary among students with different cultural backgrounds. Additionally, learning strategies, collaborative learning, and student-faculty interaction may change during students' acculturation processes. More justification for focusing on learning strategies, collaborative learning, and student-faculty interaction will be presented in Chapter Two in the discussion of this study's conceptual grounding.

Practically, through this study, I hope to help faculty members and staff better understand CIS educational experiences in the U.S., especially their engagement with learning strategies, collaborative learning, and student-faculty interaction as well as their overall institutional satisfaction. Specifically, readers will not only be able to explore students' learning behaviors, but also, to obtain an idea of their interactions with peers and faculty members over the course of the learning process. In addition, examining students' learning strategies—especially the effective learning strategies of CISs—will help readers understand patterns of CIS learning strategies as these students adjust to different learning environments in U.S. colleges and universities.

Research Questions

This study is guided by the following five research questions:

1. How frequently do CISs utilize effective learning strategies, collaborative learning, and student-faculty interaction as they study in colleges and universities in the U.S.? To what

extent do CISs and U.S. students vary in learning strategies, collaborative learning, and student-faculty interaction, controlling for student demographic characteristics, educational aspiration, and grades?

2. What is the relationship between CIS learning strategies, collaborative learning, student-faculty interaction, and their overall institutional satisfaction?
3. How does the relationship between student utilization of learning strategies, collaborative learning, student-faculty interaction, and overall institutional satisfaction vary between CISs and U.S. students?
4. To what extent do first-year and senior CISs differ in their utilization of learning strategies, collaborative learning, student-faculty interaction, after controlling for student demographic characteristics, educational aspiration, and grades? To what extent do first-year and senior CISs differ in overall institutional satisfaction, controlling for CIS learning strategies, collaborative learning, student-faculty interaction, and a set of student characteristics?
5. Does a student's country of origin (China vs. the U.S.) moderate the impact of class standing (first-year vs. senior) on learning strategies, collaborative learning, student-faculty interaction, and overall institutional satisfaction?

Significance of the Study

CISs have become the largest group among the entire international student population in U.S. higher education (Institute of International Education, 2016). An increasing number of scholars and practitioners have become aware of the significance of studying CIS engagement and learning in the U.S. context, and they are devoted to understanding how it differs from the engagement and learning of U.S. students. However, because of a small number of studies

regarding support for CIS engagement, especially their learning strategies, collaborative learning, and student-faculty interaction in U.S. higher education, scholars and practitioners have few resources to guide their practices or share with others.

This study will add theoretical, empirical, and practical value to college teaching, learning, and student engagement. The findings of this study will be beneficial for faculty members, student affairs professionals, learning advisors, and students themselves for understanding differences in student experiences as they prepare for classes, exams, and deliverables. Specific explanations of those benefits are expanded from the third to the fifth points in the following paragraphs. Moreover, integrating the findings of this study and best practices in student engagement, I proposed effective strategies for college and university leaders, faculty members, and staff in supporting CISs and enriching the collegiate experience for every student.

First, I used a relatively new dataset to examine student engagement and student overall institutional satisfaction among CISs and U.S. students. Prior studies have examined and compared international and U.S. student engagement and student satisfaction with their college (Zhao, Kuh, & Carini, 2005; Korobova, 2012). Nevertheless, due to a limitation of the old NSSE datasets, both Zhao, Kuh, and Carini's (2005) and Korobova's (2012) studies were unable to identify international students' countries of origin. Rather, Zhao, Kuh, and Carini (2005) and Korobova (2012) treated international students as one large group, which hindered their understandings of the inner group variance of international student engagement. In this study, I took a step forward to examine the engagement of CISs and U.S. students, respectively. My study uses the 2015 NSSE data to specifically examine the differences between CISs and U.S. students in three NSSE engagement indicators: learning strategies, collaborative learning, and

student-faculty interaction; these indicators are closely associated with student learning outcomes. Furthermore, I also explored the relationship between these three engagement indicators and students' overall satisfaction with their institutions. The results may help U.S. colleges and universities with their efforts in understanding and supporting CIS engagement activities. Colleges and universities may be able to make plans for supporting a specific student group in a strategic manner.

Second, this study enriches the existing scholarship by adding to researchers' and practitioners' understandings of CIS engagement in the U.S. context. Many studies have assumed that international students should be treated or encouraged to become like U.S. students or have focused on getting international students adjusted and accustomed to the U.S. education system (Andrade, 2006; Ladd & Ruby, 1999; Lin & Yi, 1997). However, by expecting international students to act exactly like U.S. students, U.S. colleges and universities have lost the original intention and benefits of having cultural diversity on campus (Redden, 2014). The findings of this study can help U.S. colleges and universities obtain a better understanding of the engagement of their CISs, by allowing them to examine the services and resources they offer not only to CISs but also to the entire international student body.

Third, faculty members can utilize the findings of this study to reexamine their approaches toward teaching CISs as well as their perceptions of different students' cultures. Many faculty members have noticed that non-English speakers are unfamiliar with U.S. classroom norms, such as active class participation, frequent group work, and criticizing the ideas of faculty members and peers, which can create many challenges in college teaching (Carroll & Ryan, 2005). Faculty members are sometimes frustrated with the challenges posed by this resulting culture clash (Redden, 2014). Internationalization in U.S. higher education not only

changes student demographics in college classes, but may also influence the instructional techniques that faculty members employ (Carroll & Ryan, 2005). By understanding the differences in student learning preferences and how those behaviors are embedded in students' culture, I recommended that faculty members constantly reflect on their teaching behaviors, adjust pedagogies or instructional techniques for accommodating different learning preference, and create more inclusive learning environments for all students enrolled in their courses.

Fourth, the findings of this study will help student affairs professionals and learning advisors better support international students in learning cross-culturally. Student affairs professionals and learning advisors who work closely with international students, such as academic advisors, specialists at teaching and learning centers, and those who teach undergraduate courses, are ideal audiences of this study. Its findings and recommendations will equip student affairs professionals and learning advisors with more knowledge and tools as they collaborate with faculty members on supporting international students within higher education organizations.

Fifth, the findings and recommendations of this study will help both CISs and U.S. students reflect on their own learning-related engagement behaviors. Students can become better aware of the learning preferences of their counterparts within diverse learning environments. CISs and U.S. students can establish a mutual understanding of each other's learning preferences cross-culturally and promote their diversity awareness and appreciation. More importantly, they will be able to support each other in various academic activities, such as course projects and study groups. Mutual understanding and peer support between CISs and U.S. students is essential for promoting academic achievement across the university.

Sixth, this study adds an important piece to the field of internationalization in higher education regarding CIS educational experiences in U.S. higher education. The findings and implications of this study may also provide insights into CIS engagement in other English-dominant countries that may face similar questions about enrolling a growing number of international students or recognizing the need to support international student engagement, such as the United Kingdom, Canada, Australia, and New Zealand. Although there might be cultural differences in higher education institutions among these countries, this study lays the groundwork for fundamental conversations to take place among scholars and practitioners about supporting international students in different countries; it could also facilitate cross-national collaborations aimed at helping international students succeed in higher education.

Definitions of Key Concepts

Chinese International Students (CISs). CISs in this study refers to students who identified their countries of origin as "China," "Hong Kong," "Macau," or "Taiwan" in the 2015 NSSE; mainly received their primary and secondary education in China, Hong Kong, Macau, or Taiwan; may hold F-1 (Student) or J-1(Exchange Visitor) visas in the U.S.; and are pursuing a postsecondary degree or degrees at a four-year college or university. CISs in this study share a common Confucian-heritage cultural background.

U.S. Students. U.S. students in this study refers to U.S. citizens who mainly received their primary, secondary, and postsecondary education in the U.S. However, due to the limitation of the data, when selecting the U.S. student sample, I used the definition of U.S. students in the 2015 NSSE—students who responded "No" to Question 31a: "Are you an international student?"

Student Engagement. Student engagement is "the time and energy students devote to educationally sound activities inside and outside of the classroom, and the policies and practices that institutions use to induce students to take part in these activities" (Kuh, 2003, p. 25).

Effective Learning Strategies. Effective learning strategies in this study refers to the techniques and skills that allow leaners to most efficiently utilize their strengths when accomplishing a specific learning task (Conti & Fellenz, 1991; Riding & Sadler-Smith, 1997).

Collaborative Learning. I used the definition of collaborative learning proposed by Barkley, Cross and Major (2014). Collaborative learning encompasses "the learning activities expressly designed for and carried out through pairs or small interactive groups" (Barkley, Cross, & Major, 2014, p. 4). Collaborative learning is one of the most frequently used umbrella terms that describes "interactive group learning" (Barkley, Cross, & Major, 2014, p.3).

Student-faculty Interaction. Kuh, Kinzie, Schuh, Whitt and associates (2010) claimed that student-faculty interaction can be classified into the following types: academic advising, providing prompt and extensive feedback on students' work, working closely with students in research and scholarly projects, and utilizing technologies to interact with students. Student-faculty interaction in this study specifically refers to direct contact, formal or informal, between students and faculty members inside and outside of the classroom, and in academic and non-academic contexts.

Culture. Lustig and Koester (2013) defined culture as "a learned set of shared interpretations about beliefs, values, norms, and social practices, which affect the behaviors of a relatively large group of people" (p. 25).

Chapter Two: Review of the Literature

This chapter is composed of three sections that present the scholarly literature regarding the educational approaches and behaviors of CISs and U.S. students in U.S. colleges and universities. The first section aims to draw a broad picture of the process and impact of internationalization in U.S. higher education in an era of globalization, and examines the salient role of international students in the internationalization of U.S. higher education. Then international students' educational experiences in the U.S. are discussed. The second section of this chapter focuses on discussing the educational experiences of CISs in U.S. colleges and universities. Students' engagement with learning strategies, collaborative learning, and student-faculty interaction are reviewed. Next, students' satisfaction with their educational experiences and the relationship between their learning strategies, collaborative learning, student-faculty interaction, and satisfaction with their educational experiences are presented. The third section illustrates the conceptual grounding of this study. Using Hofstede's (2001) Dimension of Culture, the relationship between student engagement, student learning, and cultural differences are discussed. Based on the relationship between student engagement, student learning, and cultural differences implied by the literature, anticipated findings or hypotheses of this study are described. Finally, the gaps in the current scholarly literature and how this dissertation will address those gaps are discussed.

The Internationalization of U.S. Higher Education in an Era of Globalization

Internationalization in higher education has been an explicit phenomenon in U.S. higher education in the 21st century, and has been explicitly included in the mission statement of many institutions. For example, Indiana University's mission is "to create, disseminate, preserve, and apply knowledge. It does so through its commitments to cutting-edge research, scholarship, arts,

and creative activity; … to culturally diverse and international educational programs and communities" (Indiana University, n.d.-a). Institutions also integrate internationalization into their campus policies, such as human resources, risk management, advising, and finance (Bissonette & Woodin, 2013). The features of an internationalized campus can be seen from various perspectives, such as: internationalized curricula; a growing number of international students, scholars, and faculty members; and frequent communication and exchanges with overseas institutions.

Saldanha (2002) claimed that globalization is a process of the "formations of spaces in which economics, technologies, policies, things and bodies from different places intermingle" (p. 338). Salmi (2002) argued that globalization is "the complex integration of capital, technology, and information across national boundaries in such a way as to create an increasingly integrated world market, with the direct consequence that more and more countries and firms have no choice but to compete in the global economy" (p. 24). Johnstone (2010) argued that supranational globalization has blurred the borders of a nation and a state. All of the above scholars mentioned some common trends and characteristics of globalization, including intermingling, integration, and interconnectedness.

The impact of globalization has penetrated various fields. Higher education is a field that has undergone many shifts and changes under globalization, such as the increasingly frequent mobility of students and scholars, and more communication among scholars from different countries and regions. Another phenomenon is more and more colleges and universities establishing branch campuses overseas or developing partnerships with overseas colleges and universities. Varghese (2008) stated that "cross-border education, in the context of globalization, has become a market-driven activity involving numerous providers and attracting thousands of

students who are willing to buy these services at international prices" (p. 11). Additionally, with globalization, higher education has had a new role in cultivating an international and multicultural outlook to meet the requirements of a global labor market focused on knowledge production (Varghese, 2008).

Globalization and student transnational mobility. Student transnational mobility is an important phenomenon of cross-border education and the result of a supply-demand gap in education in many countries of origin for international students, such as China (Valdez, 2015). Students' transnational mobility is not only important for individuals' academic, professional, and social development, but also important to the talent circulation between receiving and sending countries. By studying in the U.S., international students will be able to develop a set of skills such as personal growth, cross-cultural awareness and communication, and global understanding. In addition, they will also complete educational attainment and obtain promising career opportunities (Dwyer & Peters, 2004; Lee, Therriault, & Linderholm, 2012; Waters & Brooks, 2010).

Students' transnational mobility also promotes the frequency with which global talent circulates throughout the world. Hazen and Alberts (2013a) believed that Western countries greatly benefit from their ability to attract a large number of overseas students. In particular, Marginson (2008) argued that student migration in an era of globalization is dominated by doctoral granting universities led by the Ivy League schools, and globalization is actually a "one-way influence of American institutions on the rest of the world" (p. 6). Meanwhile, academic migration in globalization is a brain drain for low-income or emerging countries (Hazen & Alberts, 2013a; Marginson, 2008). However, several scholars argued that, in an era of globalization, the ideas of brain drain and brain gain do not exist anymore. Rather, they have

been replaced by “brain circulation.” Brain circulation reflects the increasingly multidirectional nature of an international flow of talent. With brain circulation, mutual benefits in skills, capital, and technology are created for both the sending and the receiving countries (Bhandari & Blumenthal, 2011; Cao, 1996; Saxenian, 2005).

Distinguishing globalization and internationalization in higher education. In the field of higher education, some scholars believe that the terms internationalization, globalization, and global engagement can be used interchangeably (Urban & Bierlein Palmer, 2014). However, echoing Johnstone’s (2010) argument, I believe that globalization and internationalization should be distinguished from each other. Globalization and internationalization in higher education focus separately on influencing change at different levels. This study mainly focused on international student engagement in the U.S. at the student level, and it investigated how supporting CISs in engagement will contribute to enhancing internationalization at U.S. colleges and universities.

Globalization is a global phenomenon and a long-term process that has been expedited and intensified because of the fast development of technology, computer, and the Internet (Maringe & Foskett, 2012). Hannerz (1996) claimed that globalization is closely related to the growth of long-distance interconnectedness. Factors that affect long-distance interconnectedness can be various, such as people’s environments, human bodies, and overseas merchandise (Hannerz, 1996). Taking the role of CISs as an example, as the world becomes smaller in the era of globalization, more and more CISs choose to study abroad, such as pursuing college degrees in the U.S.

The internationalization of higher education is the key strategic response to globalization at the institutional level, which means that globalization and internationalization are connected

and reciprocally influence one another (Maringe & Foskett, 2012). Built on interconnectedness among nations and states, internationalization in higher education usually stands for importing or exporting students, scholars, ideas, and operational modes under the influence of governmental policies (Johnstone, 2010). Knight (2003) claimed that, at the national, sector, or institutional levels, internationalization can be defined as "the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education" (p. 2). Continued from the previous example about the role of CISs in globalization, the worldwide mobility of CISs, such as studying in the U.S., may stimulate colleges and universities to come up strategies that respond to globalization on the institutional level—enrolling more CISs and internationalizing their curricula. Due to the interconnectedness of internationalization and globalization, the increased enrollment of CISs will contribute to furthering globalization to some extent.

The role of international students in the internationalization of U.S. higher education. In the global brain circulation process, international students play an active role in enhancing the internationalization of U.S. higher education (Altbach & Knight, 2007). International students are considered to be one of the most diverse groups on U.S. college and university campuses, not only because they represent 220 countries and regions in the world (Institute of International Education, 2016), but also because of their racial and ethnic identifications, nationalities, languages, socioeconomic statuses, religious and cultural backgrounds, and political views (Hanassab, 2006; Spencer-Rodgers, 2001). Beyond contributing over 30.5 billion dollars to the U.S. economy, international students also contribute international perspectives through academic interactions with faculty members and peers, and enhance their departments' academic reputations, rankings, and global connections (Andrade,

2006; Eland & Thomas, 2013; Institute of International Education, 2016; Lee, 2014). International students also help domestic students who may not have opportunities to study abroad by enriching their learning experiences and their capacities to develop the ability to interact with diverse others (Andrade, 2006; Trice, 2003; McMurtrie, 2011).

Colleges and universities also value international students and alumni as resources for potential international opportunities and cultural resources. For example, Trice (2003) believed that international students and alumni can help their departments to establish international connections with the governments, academic institutions, entities, and placement opportunities in their home countries. In addition, Urban and Bierlein Palmer (2014) studied how a Midwestern university in the U.S. engaged international students as cultural resources in support of a strategic goal of internationalization, such as being a part of multicultural group in class projects, sharing one's culture or cultural perspectives to the class, or being invited to be a language tutor. All the evidence above has indicated that international students are an important component of the student bodies of campuses, and how they have brought numerous benefits to U.S. colleges and universities. International students' academic achievement is closely relevant to their retention and success. Colleges and universities are responsible for providing international students with equal access to their resources as their U.S. students, as well as to provide the unique support they need to become successful.

International Students' Educational Experiences in the U.S.

A number of studies have investigated the educational experiences of international students in the U.S. from both rewarding and challenging perspectives. The common rewarding experiences perceived by international students include receiving a high quality higher education, gaining access to professional development, and cultivating their own personal

growth (Hazen & Albers, 2013b; Urban & Bierlein Palmer, 2016). Taking the rewarding experiences of CISs as an example, through data from 350 CISs studying in the U.S., Chao (2016) found that CISs believed that pursing a postsecondary education in the U.S. helped them develop a global view and adjust to a new system of college education, which was different from the traditional Chinese education.

Additionally, the motivations of international students' transnational education also reflect the benefits and rewards of studying abroad. First, the lack of essential resources and facilities for the subject areas in domestic countries stimulated students to pursue study abroad opportunities (Buesing, 2004; Cummins, 1993). Second, the potential of the commercial value of foreign degrees will bring additional earnings to students and help maintain a high level of returns for their investment in overseas study. In addition, foreign degrees obtained from countries with advanced higher education, such as the degrees obtained in the U.S., were often well regarded in many countries over the world and viewed as a guarantee of social and economic ascent (Cummins, 1993; Varghese, 2008; Yan & Berliner, 2011). Third, international students desire opportunities to learn about other countries and to experience different cultures (Buesing, 2004; Cummins, 1993). Fourth, students' expectations for developing a sense of identity and gaining a sense of independence through foreign study experiences also serve as a significant motivation (Buesing, 2004). Again, taking CISs as an example, Chao (2016) found that one of the important reasons CISs decided to study in the U.S. was that they wanted to learn more innovative ideas and skills that could prepare them for better careers and promising futures.

However, as a coin has two sides, pursuing postsecondary education in the U.S. also means international students need to overcome various kinds of difficulties and face challenges that they might not have experienced in their home countries. Financial burden, acculturation,

discrimination and isolation, transition and adjustment, language barriers, and psychological stress are the main challenges encountered by international students studying in the U.S. (Angelova & Riazantseva, 1999; Banjong, 2015; Lee, 2014; Lee & Rice, 2007; Rajapaksa & Dundes, 2002; Shih & Brown, 2000; Tompson & Tompson, 1996; Valdez, 2015; Wadsworth, Hecht, & Jung; 2007; Zhang, 2016). Many scholars have specifically examined challenges and difficulties faced by CISs (Leong, 2015; Wang & Mallinckrodt, 2006; Ye, 2006). Leong (2015) found that CISs had more difficulties in formidable language and cultural barriers, compared to international students from other countries or regions. Those challenges often burden international students in their efforts to achieve academic success.

Insufficient English proficiency has hindered many international students from benefitting from skills like strengthening their critical thinking, integrating their knowledge with real-world problems, and sharing their perspectives in class (Banjong, 2015; Lee & Rice, 2007; Rajapaksa & Dundes, 2002; Ryan, 2005; Valiente, 2008; Yeh & Inose, 2003). Yan and Berliner (2011) claimed that many CISs encountered challenges in the English language from different levels and made great efforts to overcome language barriers. In many circumstances, the low language proficiencies of CISs have made U.S. faculty members question the potential and competence of CISs to succeed in their programs (Yan & Berliner, 2011).

Financial stress, isolation, and discrimination also undermine international students' sense of belonging on campus and make them feel they are under supported. Banjong's (2015) study suggested that a lack of financial resources and loneliness in the U.S. also gave rise to pressure among international students, based on a quantitative study conducted among 349 international students. Banjong (2015) argued that students who were suffering from financial crises were found to have comparatively poor academic performance, because they were unable

to handle the stress caused by financial burden. To solve those issues, international students often utilized campus resources, such as counseling centers, for assistance (Banjong, 2015). Isolation perceived by international students can also be very frustrating for them in learning and socializing with their U.S. peers. Hsieh (2007) studied the classroom experiences of a Chinese female student and claimed that the student she interviewed experienced isolation and being ignored by her U.S. peers due to her silence in class. Such isolation and being ignored made that Chinese female student perceive herself as a useless person in group discussions. Moreover, that Chinese student claimed that she was also blamed for the deficiency in group discussion by her U.S. peers (Hsieh, 2007). In terms of discrimination towards international students, Lee (2014) indicated that some international students were often mistaken for U.S. students of color. Thus, they were often marginalized, discriminated against, and felt invisible on campus. Taking African Americans and international students from African countries as an example, even though they might share the same racial and ethnic background, the educational experiences, worldviews, cultural norms, and needs of international students from African countries may be quite different from those of African Americans (Lee, 2014).

Different expectations for students' academic performance may also give rise to international students' academic challenges. In U.S. colleges and universities, students are expected to proactively integrate new information with preexisting knowledge and seek answers to complex issues through connecting and extending available information (Lewis & Smith, 1993). Furthermore, in the U.S., students were often expected and challenged to maintain a deep approach to learning and gain knowledge beyond a surface-level understanding (Marton & Säljö, 1976, 1997). International students, who come from different educational systems, might need more time to learn how to synthesize different pieces of knowledge that look irrelevant, become

brave to challenge the opinions of faculty, and try to integrate what they have learned in class with real-world problems. Thus, helping international students meet the expectations for learning and adjust their learning preferences accordingly is essential to promote their academic achievement. In the next section, I will discuss an important factor that influences students' academic success—student engagement.

Student Engagement

As defined in Chapter One, student engagement measures the time and effort students spend on participating in academic and co-curricular activities (Kuh, 2003). Students tend to gain more from their collegiate experiences when they devote more time and energy to educationally purposeful activities, such as frequently interacting with diverse others and applying what they learn to solve real-world problems (Kuh, 2003). McCormick, Kinzie, and Gonyea (2013) discussed the connection of a set of conceptual frameworks and theories of student engagement. They believed that the notion of student engagement is closely related to several theoretical and conceptual foundations, such as Pace's (1980) work about students' quality efforts in utilizing facilities and opportunities on campus, and how these were related to student success; Astin's (1984) Student Involvement Theory; Tinto's (1993) social and academic integration theory; Pascarella's (1985) general causal model; and Astin's (1985) Input-Environment-Output model. Based on McCormick, Kinzie, and Gonyea's (2013) conceptual linkage of student engagement, this study focuses on Astin's (1984, 1999) Student Involvement Theory, Tinto's (1993) social and academic integration theory, and Chickering and Gamson's (1987) Seven Principles of Good Practices in Undergraduate Education in the theoretical framework.

Theoretical framework of student engagement. Astin (1999) defined "student involvement" as "the amount of physical and psychological energy that the student devotes to the

academic experience" (p. 518). The forms of student involvement are various, such as participation in academic work and co-curricular activities, interaction with faculty members, or connections with other university staff or professionals (Astin, 1999). Student Involvement Theory indicated that students' learning and personal development will be enhanced as student involvement increased (Astin, 1984). Astin (1999) argued "it is easier to become involved when one can identify with the college environment" (p.524). However, other scholars, such as Streeter (2011), hold a different opinion on student involvement. Although students can identify with the college environment, student involvement might be hindered when students from varying diverse backgrounds feel uncomfortable and disconnected with an institution (Streeter, 2011). Streeter's (2001) argument is important for international student involvement in U.S. higher education. Although international students are able to identify with their college's environment or even if they have many international peers enrolled on campus, their involvement in academic and co-curricular activities can still be very limited if they do not feel a sense of belonging with their campus. In order to serve, retain, and graduate international students (Byrd, 1991), it is crucial for faculty members, staff, and school leaders to make efforts to create a welcoming and inclusive campus environment for international students, and then subsequently also enhance their academic involvement.

Tinto's (1993) academic and social integration theory was built on an interactionist approach, which provided readers a lens through which to view student engagement from a sociological perspective. Tinto's (1999) research has shown that student engagement is the most important indicator of student persistence, which refers to the "desire and action of a student to stay within the system of higher education from beginning through degree completion" (Seidman, 2005, p.14). Additionally, Tinto's (1993) theory advocated that student persistence is

closely associated with academic progress, relationships and interactions with peers, faculty members, and staff, as well as their satisfaction with their institutions. Along with Tinto's assertion, Kuh, Vesper, and Krehbiel (1994) claimed that students' social integration depended on peer interactions and student-faculty interaction. Moreover, students' academic integration was an effective indicator of students' academic achievement and choices of disciplinary areas (Kuh, Vesper, & Krehbiel, 1994). In addition, the interactionist approach in Tinto's (1993) theory is also reflected in the extent to which students separate themselves from the pre-existing relationships they were comfortably associated with, such as family members and their home community (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006). Students' academic and social integration in college life is greatly determined by how students adopt the values and adjust to the new environments in their colleges and universities, in order to explore their own fit within these environments (Kuh et al, 2006).

Chickering and Gamson's (1987) Seven Principles of Good Practices in Undergraduate Education also provided a theoretical foundation for the notion of student engagement, because it covers student-faculty interaction, peer collaboration, active learning, instant feedback, and interactions with diverse others, which are important activities of student engagement (Kuh, 2001; Kuh, Schuh, Whitt, & Associates, 1991). The principles include "1. Encourages contacts between students and faculty. 2. Develops reciprocity and cooperation among students. 3. Uses active learning techniques. 4. Gives prompt feedback. 5. Emphasizes time on task. 6. Communicates high expectations. 7. Respects diverse talents and ways of learning" (Chickering & Gamson, 1987, p. 3). Emphasizing these principles of good practices in undergraduate education will help faculty members, staff, and students to concentrate their efforts to promote student outcomes (Kuh et al, 1991).

College student engagement in the U.S. Student engagement varies greatly among students with different backgrounds. A number of prior studies have examined the engagement of U.S. students (e.g., Kuh, 2001, 2003; Kuh & Hu, 2001; Kuh et al, 2006; Kuh et al, 2010; Quaye & Harper, 2014). The engagement of students with diverse or nontraditional backgrounds and experiences has been widely studied, and this research has focused on demographics such as gender identity, racial and ethnic identification, major fields, enrollment status, first-generation status, age, and grade point average (GPA) (e.g., Bridges, Carini, Hayek, & Harper, 2004; Carini, Kuh, & Klein, 2006; Denson, & Chang, 2009; Junco, 2012; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Pike & Kuh, 2005). Taking the engagement of first generation college students as an example, Pike and Kuh (2005) surveyed 3,000 undergraduate students in the U.S. and compared the engagement and intellectual development of first-generation and second-generation college students. They found that, compared to the engagement of students who had at least one parent who graduated from college, first generation students were generally less engaged in college life, insufficiently integrated into diverse college experiences, and perceived their college environments as being less supportive (Pike & Kuh, 2005). Among the literature addressing the educational experiences of international students in the U.S., only a few studies have specifically explored the engagement of international students (Korobova, 2012; Lee, 2014; Ross & Chen, 2015; Urban & Bierlein Palmer, 2014; Zhao, Kuh, & Carini, 2005).

International student engagement in the U.S. Compared with U.S. students, international student engagement levels differed by class standing and by different areas of engagement. As introduced in Chapter One, Zhao, Kuh, and Carini (2005) compared the engagement in academic activities between international students and U.S. students in the U.S. context. They found that, compared to U.S. students, international students were more engaged

in the areas of academic challenges, student-faculty interactions, and using technology in course activities. Additionally, international students also perceived greater gains in personal and social development and general education outcomes than their U.S. peers. Nonetheless, international students were less engaged in community service and socializing than their U.S. peers (Zhao, Kuh, & Carini, 2005). Korobova (2012) found that international students scored higher in enriching educational experiences and supportive campus environments than did U.S. students in their senior years.

Zhao, Kuh, and Carini (2005) also examined the variation of international student engagement according to their racial and ethnic identification. Although the data Zhao, Kuh, and Carini (2005) used did not allow them to identify international students' countries of origin, they used racial and ethnic identification as the proxy for international students' countries of origin and cultural norms. Thus, Zhao, Kuh, and Carini (2005) categorized international students into Asian, White, and Black. They found that Asian international students reported fewer gains in general education and had lower satisfaction with their educational experiences than their Black international peers had. Additionally, Black international students surpassed their White peers in several engagement areas, such as academic challenges, active and collaborative learnings, student interactions with faculty members, and service learning in their senior year (Zhao, Kuh, & Carini, 2005).

Little is known about Chinese international student engagement in U.S. colleges and universities. Through a case study, Ross and Chen (2015) examined the engagement of Chinese international undergraduate students who majored in business at a Midwestern university in the U.S. Ross and Chen (2015) presented their findings about the engagement strategies that CISs used to be admitted into the business school, to develop academic networks, and select courses

that could ensure a high GPA. For example, Ross and Chen (2015) claimed that pre-business CISs believed a high GPA would increase the possibility of being admitted to the business school. To achieve a high GPA, those CISs developed close academic networks with senior Chinese students in the business school and asked their advice regarding which courses were easy to get high grades and which faculty members were easier graders. To gain a high GPA and get into business schools, those pre-business CISs tended to choose courses that required "minimum effort for a maximum grade", or courses with comparatively lower requirements of intensive English, like mathematics or statistics (p. 29). With the pressure of GPA in mind, CISs even had to sacrifice their time to engage in co-curricular activities (Ross & Chen, 2015). Ross and Chen (2015) suggested that one should read those strategies employed by CISs as a sign of their efforts to achieve academic success and their ambition to achieve higher goals—that is, they sought to gain admittance into the business school and have access to better resources and opportunities; this study utilized this interpretation rather than interpreting those behaviors as a sign of the students' disengagement. More knowledge about CISs engagement in U.S. colleges and universities is desired, especially since engagement is closely associated with student learning outcomes. Using a quantitative approach, this study focuses on CIS and U.S. student engagement in learning strategies, collaborative learning, and student-faculty interaction, all of which are closely related to student learning outcomes and are also associated with cultural differences between the U.S. and China. The following paragraphs present research that has focused on college students' learning strategies, collaborative learning, and student-faculty interaction.

Effective Learning Strategies

Learning strategies enable learners to make the best use of their strengths as well as monitor their time, concentration, effort, and comprehension (McKeachie, Pintrich, & Lin, 1985; Riding & Sadler-Smith, 1997). Ormord (2011) claimed that a variety of strategies could be used by students to enhance learning, ranging from taking notes in class to summarizing information and creating conducive learning environments. With effective learning strategies, learners are more likely to have a better understanding about an emphasis on mastery or performance goal in class (Ames & Archer, 1988).

Scholars studied the learning challenges and learning strategies that international college students have encountered in English-speaking countries, as well as how the learning strategies differed between international students and domestic students. Because very few studies have investigated the learning strategies used by international students in the U.S., I will present a study conducted in Australia as an example. Ramsay, Barker, and Jones (1999) investigated the academic adjustment and learning process of 20 international freshmen at an Australian university. They found that those non-Australian students had difficulties in understanding lectures because of their vocabulary or the speed of the lecture. Although international students believed that they benefited from tutoring, they still felt challenged when tutors spoke too fast or gave limited input (Ramsay, Barker, & Jones, 1999). In addition, Ramsay, Barker, and Johns (1999) also observed a number of differences in learning preferences between non-Australian students and local Australian students. For example, in terms of the significant elements for learning, non-Australian students believed that critical thinking skills and faculty members' feedback on writing skills were essential for learning, whereas local Australian students expressed that collaborative learning and peer support were salient to learning. Different

perceptions of essential learning skills can lead to different expectations for the support provided by faculty members. It is important for faculty members and student advisors to clearly understand the challenges students have encountered in learning and the current strategies students are employing.

In terms of the learning strategies utilized by Chinese students, Yee (1989) believed that Chinese students had little choices of learning strategies under their heavy workloads and the pressure they felt to succeed academically. Hence, effective learning strategies that many Chinese students chose and many teachers expected were rote memorization and recalling of the required answers in order to pass exams (Yee, 1989). Another motivation for the rote learning among Chinese students was that students who can replicate what teachers told them were usually praised (Martinsons & Martinsons, 1996).

However, Biggs (1994) argued that people misinterpreted the learning strategies of Chinese students as rote rather than as repetition. Biggs (1994) believed that repetitive learning was an effective tool for Chinese students to recall the information they had learned accurately. Chan (1999) claimed that the difference between rote learning and repetitive learning was that repetitive learning allowed learners to connect the meaning of the materials with memorization. Chinese students believed that, after they understood the meaning of the materials, repetitive learning enabled them to better remember the information during examinations. The repetitive learning strategies also explained the success of Chinese students in exams (Chan, 1999).

Differently, Kennedy (2002) did not believe that rote learning was the typical learning strategy used by adult Chinese learners. Kennedy (2002) argued that adult Chinese learners presented strong preferences of higher-level and meaning-based learning strategies rather than

rote learning, and they were able to adopt new learning strategies through seeking help from faculty members and peers when the context of the learning changed (Kennedy, 2002).

Although the above studies addressed Chinese students' learning preferences and strategies, the preferences and strategies that those scholars discussed were the ones that Chinese students developed in the context of acquiring a Chinese-based education. Little is known about CIS learning preferences and strategies in the U.S. context. As learning environments change and new learning approaches are needed, the learning strategies adopted by learners will also change accordingly. Learners will shift to different and appropriate learning strategies in a new learning context (Takeuchi, 2003). Therefore, I am going to explore the learning strategies used by CISs in U.S. colleges and universities, such as identifying key information from readings, reviewing notes, and summarizing course materials, and compare CIS learning strategies to the ones employed by their U.S. peers.

Collaborative Learning

Collaborative learning is one of the most frequently used umbrella terms that describes "interactive group learning" (Barkley, Cross, & Major, 2014, p.3). Smith and MacGregor (1992) believed "in most collaborative learning situations, students are working in groups of two or more, mutually searching for understating, solutions, or meanings, or creating a product" (p. 10). Barkley, Cross, and Major (2014) claimed three features of CL: intentional design, the co-laboring of individuals, and meaningful learning. Collaborative learning requires students to interact with peers, which has been shown to have a positive relationship with student gains and satisfaction with college (Astin, 1993). Valdez (2015) wrote about the importance of collaborative learning between U.S. students and international students in enhancing students' language development and establishing cultural understanding. She claimed that many of the

international students she interviewed perceived collaborative learning as a positive classroom practice (Valdez, 2015).

Many scholars have noted that international students do not actively collaborate with U.S. students in learning (Lee & Rice, 2007; Sarkodie-Mensah, 1998; Yuan, 2011). Zhao, Kuh, and Carini (2005) examined the engagement of international students and found that Asian international students were less engaged in active and collaborative learning than their Black and White international peers. Based on a qualitative study with 24 international students from over 15 countries, Lee and Rice (2007) asserted that because of worries about English proficiency, international students in the U.S. were often uncomfortable with participating in group-work or interacting with their peer classmates. Lee and Rice's (2007) findings were in accord with what Robertson, Line, Jones, and Thomas (2000) found in their study, that the elements which prevented international students from class participation and teamwork were anxiety and a lack of language proficiency and self-confidence. Thus, it is understandable that many international students prefer mingling, sitting, studying, and doing collaborative study only with peers from the same country or who share similar cultural backgrounds (Sarkodie-Mensah, 1998; Tompson & Tompson, 1996). Yuan (2011) found a similar pattern in collaborative learning among CISs in her qualitative study of ten CISs in a U.S. university.

U.S. students' negative perceptions of CISs can also hinder CIS collaborative learning with English native speakers. Valdez (2015) claimed that most CISs she interviewed believed that U.S. students had negative perceptions of CISs when they needed to engage in teamwork. One Chinese interviewee attributed U.S. students' frustration in teamwork and negative perception of CISs to CIS's slow reactions, poor expressions of their own opinions, and not knowing the right time to stop speaking and/or jump into a conversation (Valdez, 2015). It does

take some time for many CISs to learn and adjust to the pattern of collaborative learning employed by U.S. students.

Most of the literature illustrated above indicated neither the type of institutions those CISs were enrolled in, nor did they compare the extent to which collaborative learning differed between CISs and U.S. students. Zhao, Kuh, and Carini's (2005) study compared the mean differences in active and collaborative learning between first-year international students and U.S. students, and then between senior international students and U.S. students. They found that first-year international students scored significantly higher than their U.S. counterparts in active and collaborative learning. Nevertheless, senior international students scored lower than their U.S. peers in active and collaborative learning. Zhao, Kuh, and Carini (2005) attributed the changes in the differences in student engagement between international students and U.S. students to students' adaption and adjustments to the cultural milieu by their senior year.

This study will specifically examine CISs and U.S. students who are pursuing bachelor's degrees at four-year institutions in the U.S. and it will compare the differences in their collaborative learning. With a good understanding about the pattern of CISs' and U.S. students' collaborative learning, faculty members and student advisors will better promote the collaborative learning between CISs and U.S. students.

Student-faculty Interaction in Academic Activities

Several studies have examined the impact of student-faculty interaction on student development and learning outcomes (Kuh & Hu, 2001; Kuh et al, 2006; Pascarella & Terenzini, 1980; Umbach & Wawrzynski, 2005). Kezar and Moriarty (2000) found that student-faculty interaction is positively associated with a wide range of student outcomes, such as students' self-assessed leadership abilities and social self-confidence. Faculty members play an essential role in

influencing student learning both in and out of the classroom (Umbach & Wawrzynski, 2005). Through interviews with two international students enrolled in the U.S., Tseng and Newton (2002) found the relationship between international students and their instructors and advisors was important to international students' learning. Additionally, a good relationship effectively helped international students achieve their goals and promote professional development (Tseng & Newton, 2002). Umbach and Wawrzynski (2005) advocated that if faculty members employed collaborative teaching and learning methods, and if they tended to value the behavior of respecting students and challenging them academically, students were more likely to have higher levels of engagement and learning outcomes. Chickering (1969) argued that students' senses of purpose would be enhanced as the frequency of student-faculty interaction increased, regardless of whether the interaction was formal or informal. The literature above all supports the important role of faculty members in enhancing students' academic achievement and supporting their success.

Several scholars examined the beneficial effects of student-faculty interaction among students with diverse backgrounds. Lundberg and Schreiner (2004) investigated the relationship between student-faculty interaction and student learning. They found that, compared to students' background characteristics, students' relationships with faculty members acted as strong predictors of learning. Those predictors were strongest for students of color (Lundberg & Schreiner, 2004). In addition, Anaya and Cole (2001) examined the impact of student-faculty interaction on college students' academic achievement among Latina/o students, and found that student-faculty interaction concerning both academic interactions and personal interactions, and students' perceived quality of relationships with faculty members, were positively associated with Latina/o students' college grades. Sax, Bryant, and Harper (2005) compared the different

effects of student-faculty interaction between college men and women from several perspectives, such as gender differences in frequencies of interacting with faculty members and the impact of involvement with faculty members. One of the interesting findings was that female students reported more frequent and more positive interactions with faculty members than their male counterparts did in general. However, male students reported more frequent student-faculty interaction than female students in the following aspects: talking about better grades with faculty members outside of class, demonstrating stronger interests in science and the arts, as well as showing a stronger sense of competitiveness (Sax, Bryant, & Harper, 2005). Kezar and Moriarty (2000) also claimed that student-faculty interaction had a positive association with the self-rated public speaking ability of male students, and perceptions of their capacity to influence others for female students.

Not all studies supported the positive effects of student-faculty interaction on all students. Pascarella and Terenzini (1991) claimed that pure social exchanges between students and faculty members did not affect students' learning outcomes unless they involved intellectual or substantial interactions. More to the point, Endo and Harpel (1982) found that student-faculty interaction, regardless of whether it was formal or informal, did not have a significant impact on students' academic achievement as measured by college GPA. Kuh (2003) also discussed the appropriate amount of interactions with faculty members being considered as enough interactions. He highlighted that more interactions may not necessarily equal better interactions between students and faculty members (Kuh, 2003). The essential and substantial factor of the quality of interactions relied on the nature and frequencies of the contact (Kuh, 2003). In other words, student-faculty interaction will not matter most to student learning unless "it encourages

students to devote greater effort to other educationally purposeful activities during college" (Kuh, 2003, p. 29).

Most of the studies reviewed above were about the interactions between U.S. students and faculty members in U.S. colleges and universities, and only a few studies discussed the extent to which international students, especially CISs, interacted with faculty members in academic activities in a U.S. context (Yan & Berliner, 2011; Valdez, 2015). Yan and Berliner (2011) claimed that, due to not knowing the norms of student-faculty interaction and the best way to approach their faculty members, CISs were reluctant to initiate a conversation with their professors. Valdez (2015) found that only a small proportion of CISs she interviewed believed their faculty members had a good perception of CISs, such as believing them to be hardworking students or viewing them as an asset in class. The majority of CIS interviewees in Valdez's (2015) study perceived that their faculty members did not have a positive perception of CISs in student-faculty interaction. For example, one of the Chinese students that Valdez (2015) interviewed observed his/her faculty spoke to U.S. students with a smile on her face, yet she seemed to display a negative mood when talking to a group of Chinese students afterwards. That Chinese student was confused about the abrupt change in that faculty's mood and could not understand "why the professor would not act the same way with American students and with the student's group of Chinese students" (Valdez, 2015, p. 196). This type of experience can prove frustrating and unfair for international students. My study not only adds to current studies on CIS interactions with faculty members, but also reveals the extent to which CIS interactions with faculty members differ from the types and levels of interactions between U.S. students and faculty members.

Student Engagement Varies between Students with Different Class Standings

My study assumes that the CIS engagement in learning strategies, collaborative learning, and student-faculty interaction is very different between first-year and senior students. On an individual level, this difference in engagement between first-year and senior CISs is a result of students' acculturation and adjustment of learning preferences when studying in the U.S. Moreover, on an institutional level, this difference is greatly determined by the expectations and goals for student development in U.S. higher education. Those two levels of effects intertwine with one another in influencing CIS changes and development in engagement.

The shift of learning environments from China to the U.S. requires CISs to adjust their approaches and behaviors in engagement intentionally, such as effective learning strategies, collaborative learning, and student-faculty interaction, through their acculturation experiences. Berry (2005) defined acculturation as "the dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups and their individual members" (p. 698). Berry (1997) first proposed the widely used acculturation stress and coping framework, and argued that psychological acculturation occurred when individuals experienced many life changes and viewed such life changes either as opportunities or difficulties, in a cognitive sense. Berry (1997) classified the difficulties perceived by individuals regarding the life changes between two cultures as acculturative stressors. The long-term goal of acculturation is to overcome these acculturative stressors and adapt to the new culture with coping strategies (Berry, 1997).

Senior CISs have spent more time learning in the U.S. and adapting to learning environments in U.S. higher educational contexts. Intentionally or unintentionally, senior CIS learning behaviors and engagement have changed during the time they spend studying in the

U.S. Specifically, senior CISs underwent their learning preferences developed in China, learned about the cultural norms in U.S. classroom, and adopted various strategies to meet their U.S. faculty members' expectations for learning. Research has shown that international students are willing to change and behave differently to meet the new learning demands and teaching styles in an intercultural educational environment (Kennedy, 2002; Volet & Renshaw, 1996). In contrast, U.S. college environments are new and unfamiliar to first-year CISs, whose learning and engagement are mainly influenced by the Chinese education they acquired through their secondary education. Therefore, based on various individual experiences of CISs in the U.S., there should be a gap in engagement between first-year and senior CISs in the U.S. context.

Acculturation is a process that is influenced by both individual and group or societal factors (Berry, 2005). Thus, the expectations for and goals concerning student development from U.S. higher education institutions also influence the engagement behaviors of CISs. In the process of a paradigm shift from the instruction paradigm to the learning paradigm in undergraduate education, Western-style colleges and universities, like the higher education institutions in the U.S., have placed more emphasis on life-long learning, self-motivation, deep learning, critical thinking, and problem solving over passing exams and pursuing high grades (Barr & Tagg, 1995; Kennedy, 2002; Valiente, 2008). Thus, active engagement in class activities, frequent group work, and learning independently have been widely recognized as U.S. classroom norms (Carroll & Ryan, 2005). If one asserts that first-year CISs have just come out of the traditional Chinese learning culture and environment that emphasizes rote learning and memorizing, then senior CISs are more likely to develop in the directions that U.S. higher education institutions expect them to go through during their years of learning in the U.S. Therefore, given the individual motivations in the acculturation process, coupled with

institutional expectations for and influences on student development, this study hypothesizes that the engagement in learning strategies, collaborative learning, and student-faculty interaction between first-year and senior CISs are different.

Student Satisfaction with Educational Experiences and Institutions

Beerli Palacio, Díaz Meneses, and Pérez (2002) used a theoretical framework of consumer satisfaction to define student satisfaction. They believed "satisfaction has been considered to be an affective response in a time (*t*), the moment of the latest registration of the students, resulting from the evaluation of the teaching services and study support offered to the student by the university" (p. 492). McCormick, Sarraf, BrckaLorenz, and Haywood (2010) claimed that student satisfaction can be measured "by both specific aspects of the student experience as well as overall impressions of the experience" (p. 4). Students' overall institutional satisfaction closely relates to their commitment to degree completion and to their institutions (Pascarella, Smart, & Ethington, 1986).

Prior studies have claimed that frequent student-faculty interaction is closely associated with students' satisfaction with their institutions and educational experiences. For example, Astin (1993) claimed that student's satisfaction with college was greatly determined by how they interacted with fellow students and faculty members. In particular, Astin (1999) indicated "students who interact frequently with faculty members are more likely than other students to express satisfaction with all aspects of their institutional experience, including student friendships, variety of courses, intellectual environment, and even the administration of the institution" (p. 525). Other than that, Tinto (1993) argued that the higher the level of student-faculty interaction that student had, the stronger satisfaction and sense of belonging students

reported. However, the relationship between students' effective learning strategies, collaborative learning, and students' overall institutional satisfaction needs to be explored further.

The above studies that examined student satisfaction did not particularly focus on international students as an individual group. Zhao, Kuh, and Carini (2005) and Korobova (2012) specifically examined international students' satisfaction with their colleges. Zhao, Kuh, and Carini (2005) found that both first-year and senior international students had a lower level of satisfaction with their overall educational experiences and their institution than their U.S. peers did. When broken into subgroups by racial and ethnic identification, international students from Asia had much lower satisfaction than their White and Black peers did, and this trend applied to both first-year and senior Asian international students (Zhao, Kuh, & Carini, 2005). However, Korobova (2012) found "international and American students similarly evaluated their entire educational experience at this institution between good and excellent" (p. 137). I will take this idea a step further by examining CIS overall satisfaction with their educational experiences and their institutions, and then comparing CIS overall institutional satisfaction with that of U.S. students.

Conceptual Grounding

Although Ross and Chen (2015) believed "culture, on its own, cannot wholly explain the complexity of student behaviors on college campuses" (p. 13), I contend that cultural differences are the most significant indicator that explains the discrepancies in engagement between CISs and U.S. students. The goal of this study is not to measure cultural differences between CISs and U.S. students in the context of U.S. higher education. Therefore, this study is not going to assess the impact of culture on student engagement. Rather, because learning strategies, collaborative learning, and student-faculty interaction can be influenced by different students' cultures and

may vary among students with various cultural backgrounds, I will integrate Hofstede's (2001) dimensions of culture as the conceptual grounding to explain my findings concerning the differences in learning strategies, collaborative learning, and student-faculty interaction between CISs and U.S. students.

Hofstede's dimensions of culture. Hofstede (2001) defined culture as "the collective programming of the mind that distinguishes the members of one group or category of people from another" (p. 9). Hofstede (2001) proposed five dimensions of culture to present cultural differences: power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, and long-term versus short-term orientation. Hofstede's (2001) dimensions of culture have been frequently used to measure how an individual's national culture influences his or her own value and behaviors. Because Hofstede's dimensions of culture do not capture the cultural changes in internationalized higher education (Signorini, Wiesemes, & Murphy, 2009), I am slightly skeptical of the applicability of individualism versus collectivism, power distance, and uncertainty avoidance proposed by Hofstede (2001) in explaining the differences of engagement in learning strategies, collaborative learning, and student-faculty interaction between CISs and U.S. students in internationalized higher education in the U.S. Thus, I will test the applicability of those three dimensions in this study.

Hofstede (2001) claimed that the "individualism-collectivism" dimension is closely related to "the integration of individuals into primary groups" (p. 29). The "individualism-collectivism" dimension suggests that individualist societies, such as the U.S., emphasize individuals, freedom, competition, and independence. As evidence of the individualism in U.S. higher education, intellectual ownership, individual voices, assertiveness and initiative, and students' freedom in choosing majors and selecting courses are highlighted in U.S. academic life

(Shapiro, Farrelly, & Tomaš, 2014). Thus, education in the U.S. is more likely to emphasize independent thinking and problem solving. By contrast, collectivist societies, such as China, are characterized by cooperation and collaboration, willingness to accept others' viewpoints, saving face, interpersonal harmony, and self-sacrifice for the benefits and the success of a team, family, or society (Wang, 2001; Bellah, Madsen, Sullivan, Swidler, & Tipton, 2007). Thus, the education in China is more likely to emphasize collaborative learning. The individualism-collectivism dimension will help to explain my findings regarding the different levels of collaborative learning reported by CISs and U.S. students.

Furthermore, the "power distance" dimension will be used to explain the different levels of student-faculty interaction between CISs and U.S. students. Hofstede (2001) defined "power distance" in a business organization context, "[t]he power distance between a boss B and a subordinate S in a hierarchy is the difference between the extent to which B can determine the behavior of S and the extent to which S can determine the behavior of B" (p. 83). Although the relationship between faculty members and students in their interactions is unlike the relationship between a boss and a subordinate, faculty members, as the authority of knowledge, have the symbolic power in the teaching and learning process (Bourdieu, 1989). In academic interactions between faculty members and international students in the U.S. context, faculty members dominate the teaching and learning relationship, and their attitude and expectations for academic performance have a strong impact on the development of international students' perspectives on learning. Faculty members determine course goals, course content, and the criteria of measuring students' performance. For international students who come from different educational systems, they need to make great efforts in identifying the explicit and implicit rules in class and adjusting to classroom environments as fast as they can when they start learning in the U.S. Hence, faculty

members have the symbolic power in influencing students' perspectives on learning. International students are actually in a disadvantaged position in such a power imbalance and they may develop different engagement behaviors than their U.S. peers due to this power distance.

Hofstede's (1986) "uncertainty avoidance" dimension describes a situation in which people from a different cultural norm "feel threatened towards situations they perceive as uncertain, unstructured or unknown" (p. 308). The "uncertainty avoidance" dimension will be used to explain whether CISs would avoid uncertainty when they feel uncomfortable to engage in learning strategies, collaborative learning, and student-faculty interaction in the U.S. Some cultures have a relatively low level of uncertainty avoidance, such as South Korea and Russia, which means that people in those countries are more comfortable with unpredictable life. However, some cultures have a high level of uncertainty avoidance, such as China and Switzerland. People in those countries need clear goals and low deviations in people's behaviors (Lustig & Koester, 2013). After comparing Asian culture to U.S. culture, Hofstede (2001) also claimed that Asian culture has stronger power distance and uncertainty avoidance than the culture in the U.S. Taking this study as an example, I would hypothesize that first-year CISs might feel uncomfortable interacting with faculty members with whom they were unfamiliar. However, Berger and Calabrese's (1975) uncertainty reduction theory argued that, regardless of people from a high uncertainty avoidance culture or low uncertainty avoidance culture, they tended to reduce the uncertainty and ambiguity as soon as possible through collecting information and communication when coming to a new environment.

Critiques of Hofstede's dimension of culture. Signorini, Wiesemes, and Murphy (2009) criticized Hofstede's dimensions of culture by exploring its limitations in the field of

higher education. They indicated that Hofstede's (2001) dimensions of culture model oversimplified cultural differences and placed too much emphasis on cultural differences rather than cultural commonalities. Additionally, Hofstede's (2001) dimensions of culture did not take cultural changes into account and thus failed to reflect the dynamic cultural changes present in internationalized higher education (Signorini, Wiesemes, & Murphy, 2009). Therefore, I will test the applicability of Hofstede's (2001) dimensions of culture cautiously and critically when examining whether individualism versus collectivism, power distance, and uncertainty avoidance can explain the differences in engagement between CISs and U.S. students in the context of U.S. higher education. More discussions will be presented in Chapter Five.

The role of culture in student engagement. The study of culture and its impact on organizations provides rich information about the differences in human behavior as influenced by cultural factors (Hofstede, 2001). Hilliard (1992) claimed that learning styles were an important component of cultural behavioral style. Ladd and Ruby (1999) conducted a comparative study among 35 international students who studied in the U.S. and investigated their learning preferences. Unsurprisingly, Ladd and Ruby (1999) argued that the learning preferences reported by international students varied. For instance, some preferred experiential learning, whereas others were more passionate about pursuing goals closely related to their interests. In addition, Cheng (1987) reported that most international students had to shift their learning styles from faculty-centered to frequent student-faculty interaction, from passive memorizing to proactive learning. This means that international students need to develop certain skills that are not emphasized in their home countries, such as critical thinking and independent problem-solving skills.

Students' academic cultural norms are influenced by their broader societal culture (Shapiro, Farrelly, & Thomas, 2014). Kennedy (2002) found a strong association between Chinese culture and Chinese students' learning preferences. The learning preferences adopted by Chinese students were greatly influenced by their Confucian values and heritage, which emphasized strict discipline and appropriate behavior (Chan, 1999; Huang, 2005; Kennedy, 2002; Yan & Berliner, 2011). Chan (1999) highlighted the importance of understanding how a Confucianist philosophy had helped to shape Chinese thinking and learning patterns, as well as typical classroom behaviors. Recognizing the value of being silent or using few words to communicate one's opinions and thoughts, traditional Confucians consider a set of behaviors as bad manners or a lack of wisdom, such as speaking everything in one's mind openly, stating the problems or issues explicitly, and asking unnecessary questions without deep thinking ahead of time (Valiente, 2008). Yan and Berliner (2011) argued that most CISs were accustomed to being given strict directions and rigorous discipline in their studies in China. Thus, it was challenging for them to develop self-directedness and independence when studying in the U.S. Additionally, CISs had been cultivated and trained as passive recipients of information in China. Hence, they tended to greatly rely on external guidance and discipline, which would be very difficult and challenging for teachers to apply a constructivist approach in teaching in the U.S. (Yan & Berliner, 2011).

Huang and Brown (2009) asserted that cultural difference is an important element that affects Chinese students' academic learning in the U.S. For instance, 80% of Chinese students in an English-as-Second-Language (ESL) program in the U.S. reported that too much class participation and group work had negatively affected their ability to garner important information to study for tests (Huang & Brown, 2009). Additionally, Chinese students

questioned the value of professors placing more emphasis on class discussion over lecture and professors' failure to follow textbooks in the U.S. (Huang & Brown, 2009).

Student-faculty interaction in class are fewer in China compared to those in U.S. classrooms. Wan (1999) interviewed two Chinese graduate students studying in a university in the U.S. and learned that when students wanted to ask questions in the middle of a lecture in China, they were usually asked to wait until the professor finished talking. That practice ensures instructors can concentrate on the lecture without being interrupted (Liu, 2001). The relationship between professors and students in China was very formal (Huang, 2005). Professors are usually regarded as someone superior and as the authority in the classroom, and they cannot be challenged and should be respected (Huang, 2005; Wan, 1999; Yuan, 2011). This explains why many CISs often ask questions after class rather than jumping into the conversations during class time when studying in the U.S. Chinese students unconsciously bring Confucian-oriented learning behaviors to U.S. classrooms. Their silence might be interpreted as passive by U.S. professors who may have a Socratic orientation in teaching (Chan, 1999; Huang, 2005). Hence, understanding Chinese culture may help faculty members in the U.S. understand the true reasons for Chinese students' behaviors in learning in the U.S.

Understanding the culture in the U.S. will contribute to promoting international student engagement and enhancing their learning (Yuan, 2011). Yuan (2011) interviewed a faculty member who taught Chinese students at an U.S. university. She found that understanding the culture in the U.S. helped students develop a sense of belonging in class, which helped students "to participate more, engage more, and learn more" (Yuan, 2011, p.148). Additionally, making CISs understand the culture of a U.S. college classroom also helped them clarify the expectations of their professors. For example, students are expected to express their thoughts and propose

questions freely and being quiet in class can be considered as a student's display of incompetence and inattentiveness in a U.S. learning context (Yuan, 2011), whereas it would be perceived as a sign of good self-discipline and of respecting teachers in China. Therefore, it is very necessary and important that faculty members and staff assist CISs in understanding the culture in U.S. society and academic life.

Hypotheses of Findings

Based on the literature review, I proposed the following five hypotheses for those five research questions. A brief justification will be provided after presenting each of the hypothesis.

H1: Among both first-year and senior students, CISs will score similarly in utilizing effective learning strategies as U.S. students do; they will also score higher in employing collaborative learning and lower in student-faculty interaction than U.S. students do. The differences in utilizing effective learning strategies, employing collaborative learning, and student-faculty interaction between senior CISs and senior U.S. students will be smaller than that between first-year CISs and first-year U.S. students. Hofstede (2001) claimed that Asian culture has stronger uncertainty avoidance than the culture in the U.S. My study hypothesizes that CISs tend to avoid frequent interactions with faculty members in the U.S., because they are uncertain about and unfamiliar with the norms of interactions with faculty members in the U.S. In contrast, CISs may not avoid employing effective learning strategies when studying in the U.S, because effective learning strategies are often emphasized by teachers in class in China. Thus, this study hypothesizes that employing effective learning strategies may not differ significantly between CISs and U.S. students.

Additionally, CISs may employ more collaborative learning than U.S. students, because China is a collectivist society that values teamwork and collaboration (Wang, 2001; Bellah,

Madsen, Sullivan, Swidler, & Tipton, 2007), whereas the U.S. is an individualist society that values individuals and independence (Shapiro, Farrelly, & Tomaš, 2014). Confucian-heritage culture emphasizes a notion of collaboration and cooperation, and advocates a belief that, when a group of people are learning together, there must be someone who can be the teacher of the group (San Ren Xing, Bi You Wo Shi Yan). Chinese learners feel comfortable seeking help from peers (Zhang, 2013). Therefore, CISs are more likely to value the opportunities of learning from others in collaborative work.

In addition, because CISs view faculty members as the authority in the classroom and the major source of knowledge (Huang, 2005; Yuan, 2011; Zhang, 2013), there is a power distance between CISs and faculty members (Zhang, 2013). Due to the respect and awe that CISs have for faculty members, the student-faculty interaction of CISs may be less than that of U.S. students. Additionally, differing from first-year CISs who have just come out of the traditional Chinese learning culture and environment and are in the process of acculturation at U.S. colleges and universities, senior CISs are more likely to develop toward the direction that U.S. higher education institutions expect them to go. Senior CISs are inclined to engage in academic activities similar to what their U.S. peers did. Hence, this study hypothesized that the differences in learning strategies, collaborative learning, and student-faculty interaction between senior CISs and senior U.S. students would be smaller than the differences in those three engagement indicators between first-year CISs and first-year U.S. students.

H2: CIS learning strategies, collaborative learning, and student-faculty interaction will have a positive relationship with their overall institutional satisfaction. Such relationships will be positive among both first-year and senior CISs. Students' overall institutional satisfaction can be related to various factors, such as learning experiences,

development, academic success, and other student outcomes. Prior studies have found a positive and significant relationship between learning strategies, collaborative learning, student-faculty interaction, and various student outcomes respectively, such as student learning, development, and cultural understanding (Ames & Archer, 1988; Astin, 1993; Ramsay, Barker, & Jones, 1999; Valdez, 2015). Those student outcomes may contribute to promoting student satisfaction with their institutions and educational experiences. Therefore, this study hypothesizes that learning strategies, collaborative learning, and student-faculty interaction have a positive and significant relationship with students' Overall Institutional Satisfaction. Such a positive and significant relationship is applicable to both first-year and senior CISs.

H3: The relationship between CIS learning strategies, collaborative learning, student-faculty interaction, and overall institutional satisfaction will be statistically different from the relationship of those four measures among U.S. students. This type of different relationship is applicable for both first-year and senior students. As it was justified above, learning strategies, collaborative learning, and student-faculty interaction may vary between CISs and U.S. student due to students' different cultural backgrounds. Because of those different educational experiences and different extent of engagement during college life, the overall institutional satisfaction of CISs and U.S. students may also be different from each other. Therefore, this study hypothesizes that, for both first-year and senior students, the relationship between learning strategies, collaborative learning, student-faculty interaction, and Overall Institutional Satisfaction differs between CISs and U.S. students.

H4: First-year CIS engagement in effective learning strategies, collaborative learning, and student-faculty interaction, as well as their overall institutional satisfaction will be statistically significant lower than that of senior CISs. Through a quantitative study of

Chinese adolescents in Canada, Kuo and Roysircar (2004) found that the length of residency was a significant predictor of acculturation. I believe that time is an important factor and a resource that is closely associated with student engagement—the longer CISs study in the U.S., the better CISs adjust to college life in the U.S. and engage more in academic and co-curricular activities. Therefore, I believe that the Learning Strategies, Collaborative Learning, and Student-faculty Interaction, and Overall Institutional Satisfaction of first-year CISs will be significantly lower than that of senior CISs.

H5: A student country of origin (China vs. the U.S.) will moderate the impact of class standing (first-year vs. senior) on effective learning strategies, collaborative learning, and student-faculty interaction, and student overall institutional satisfaction. Based on prior studies, student learning and behaviors varies among students with different cultural background (Kennedy, 2002; Ladd & Ruby, 1999; Yan & Berliner, 2011, 2011). A student's country of origins is an important indicator of students' cultural differences. Hence, student engagement, such as Learning Strategies, Collaborative Learning, and Student-faculty Interaction, as well as Overall Institutional Satisfaction, may vary among students of different countries of origin. Additionally, students' class standings may reflect their length of stay in the U.S., which may be related to their adjustment, acculturation, and engagement at U.S. colleges and universities. Bringing the possible factors of student country of origin and class standing together, this study hypothesizes that those two characteristics have an interaction effect on student learning strategies, collaborative learning, student-faculty interaction, and overall institutional satisfaction.

Summary of the Literature Review

Although the above studies and literature have touched on various aspects of student engagement, a number of gaps in the current scholarly literature also indicate the significance of this study. First, a large amount of literature and studies regarding Chinese students' learning behaviors either were written in 1980s or 1990s, or used data collected decades ago (Ying, 2003). In an era of internationalization in higher education, the findings from studies nearly 30 years ago may not accurately and sufficiently reflect the rapidly changing situations of CIS engagement. This study will use the 2015 NSSE data to examine CIS engagement in effective learning strategies, collaborative learning, and student-faculty interaction.

Second, many prior studies explored the learning strategies, collaborative learning, and student-faculty interaction of CISs in the context of China (Kennedy, 2002; Martinsons & Martinsons, 1996; Yee, 1989). Only a small number of studies addressed how Chinese learners adjusted their learning for new learning environments in English-speaking countries. Pusch (1979) portrayed the learning continuum and expressed that learning might start with ethnocentrism on one end of the spectrum and end with adaptation, assimilation, or multiculturalism on the other end. It means that someone's learning preferences or behaviors may change over time or due to the change of the external factors. Therefore, to understand CIS engagement and learning in the U.S., it is important to understand how learning environments and cultural changes influence CIS learning.

Third, little is known about CIS engagement and learning preferences in the U.S. context. According to the statistics released by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 2016, the U.S. attracted the most overseas students to study in its colleges and universities, followed by the United Kingdom, Australia, France, and Germany

(UNESCO, 2016). Echoing UNESCO's (2016) statistics, the Institute of International Education (2015) also claimed that the U.S. is the top leading host country, as it has enrolled more than 4.5 million international students in the world to its colleges and universities, which is almost double the number of international students hosted by the United Kingdom.

China is the top country of origin for sending the most students to study in the U.S. There are some studies that focus on CIS learning experiences in colleges and universities at English-speaking countries; however, many of those studies investigate CISs who were studying in New Zealand (Holmes, 2004, 2006), Australia (Edwards, 2008; Ramsay, Barker, & Jones, 1999; Volet & Renshaw, 1996), and the United Kingdom (Gao, 2006; Mathias, Bruce, & Newton, 2013). Higher education in the U.S. has its own unique characteristics, such as a highly diverse student body and the culture in the U.S. which is embedded in campus environments, especially when compared to the higher education in other English-speaking countries listed above. More and more scholars and practitioners in the U.S. have realized the significance of supporting CIS learning in the U.S., but they have limited resources.

Fourth, among the literature discussing CIS learning experiences in the U.S. context, a large portion of them did not examine students' experiences in four-year institutions, but in short-term exchange programs (Neuby, 2012) or English-as-Second-Language (ESL) programs (Goh & Foong, 1997; Huang, 2005; Huang & Brown, 2009; Zhang, 2015). Therefore, more literature on understanding CIS learning behaviors and engagement in traditional college life in the U.S. is needed. I will concentrate on CIS learning at four-year institutions in the U.S.

Finally, the majority of the previous studies on CIS engagement or learning preferences used a qualitative method (Hsieh, 2007; Lee & Rice, 2007; Ross & Chen, 2015; Valdez, 2015; Yan & Berliner, 2011; Yuan, 2011), which is widely employed when researchers want to

understand the experiences and perspectives of specific cases (Johnson & Christensen, 2008). More quantitative studies on CIS engagement in the U.S. using large-scale datasets are needed. With quantitative approaches, researchers are able to test their hypotheses based on empirical data, and try their best to be value free or avoid human bias whenever possible (Johnson & Christensen, 2008).

Chapter Three: Research Methodology

This chapter begins with descriptions of the data source, the psychometric properties of the data, and the main measurements used in this study. From there, it presents the data collection and sampling methods. After portraying the analytical methods for each research question, the chapter is ended by addressing the limitations of the study.

Source of Data

This study used a secondary data source, the 2015 NSSE, to examine the engagement and satisfaction of CISs and U.S. students in U.S. colleges and universities. The following paragraphs will first introduce the history and development of NSSE. Then, the main instrument used in this study and psychometric properties of the data source will be presented.

NSSE. The 2015 NSSE was administered by the Center for Postsecondary Research at Indiana University—a research center affiliated with the School of Education that concentrates on measuring college student engagement in academic and co-curricular activities. Launched in 2000, the NSSE was designed to measure the amount of time and effort that college students spend on programs and activities related to their academic and personal development. The NSSE has been broadly used to assess the collegiate experiences of first-year and senior students enrolled at four-year colleges and universities (NSSE, n.d.-a). By 2015, more than 1600 colleges and universities in the U.S. and Canada had participated in the NSSE. More than five million students have responded to the NSSE since it was administered in 2000 (NSSE, 2015). In each survey, students were asked a set of questions regarding their engagement in academic activities, interactions with faculty members and students with diverse backgrounds, and perceptions of a supportive campus environment.

After ten years of administration and improvement, in 2013, the NSSE launched an updated survey with new engagement measures to investigate college student engagement (NSSE, 2013). The updated NSSE instrument is composed of 125 items measuring the amount of time and energy that students devote to educationally purposeful activities, and it asks about students' demographic backgrounds. Based on the item themes, the survey is organized into ten "engagement indicators," an evolution of the previous NSSE "Benchmarks of Effective Educational Practices" (NSSE, 2014). Those ten engagement indictors are: Learning Strategies, Collaborative Learning, Student-faculty Interaction, Higher-Order Learning, Reflective and Integrative Learning, Quantitative Reasoning, Discussions with Diverse Others, Effective Teaching Practices, Quality of Interaction, and Supportive Environment.

Main measurement. This study focuses on three engagement indicators in the 2015 NSSE: Learning Strategies, Collaborative Learning, and Student-faculty Interaction. Engagement Indicator scores are generated from student individual scores on each item. All items in Learning Strategies, Collaborative Learning, and Student-faculty Interaction used four-point response scales: 1 (Never), 2 (Sometimes), 3 (Often), and 4 (Very Often). Students' four-point responses on individual items contributing to engagement indicators were converted to a 60-point scale in the NSSE 2015 dataset (NSSE, n.d.-b). I am taking the Engagement Indicator "Learning Strategies" used in this study as an example: Learning Strategies was composed of three items, and each item had four response options (Never, Sometimes, Often, and Very Often), which were converted into values of 0, 20, 40, or 60, resulting in a Learning Strategies score range of 0 to 60. Specifically, if the Learning Strategies score equaled zero, every student who responded to Learning Strategies items chose the lowest response option for all three items in Learning Strategies. In contrast, if Learning Strategies score equaled 60, all students chose the

highest response option for all three items in Learning Strategies. From here, the converted values for each Learning Strategies component items were averaged to create a score for Learning Strategies as a scale. Students responded to all three component items in Learning Strategies to obtain a Learning Strategies score. If they did not, their Learning Strategies scores were coded as missing (NSSE, n.d.-b). The creation of Learning Strategies, Collaborative Learning, and Student-faculty Interaction will be explained in greater detail in the following paragraphs.

Learning Strategies is a scale (Cronbach's α among first-year students = .770; Cronbach's α among senior students = .783) created by averaging three items that ask the extent to which students utilize strategies to succeed in academic work, such as identifying key information from reading assignments, reviewing notes after class, and summarizing what they learned in class and course materials. Collaborative Learning is a scale (Cronbach's α among first-year students = .816; Cronbach's α among senior students = .808) averaged from four items that measure the extent to which students ask peers for helping with understanding course materials, explain course materials to other students, prepare for exams by reviewing with other students, and work on projects and assignments with other students. Student-faculty Interaction is a scale (Cronbach's α among first-year students = .832; Cronbach's α among senior students = .855) created by averaging four items that assess the frequency of meaningful and substantive interactions between students and faculty members in the following activities: talking about career plans; working on activities other than coursework; discussing course topics, ideas, or concepts outside of class; and discussing academic performance. The means and standard deviations of Learning Strategies, Collaborative Learning, and Student-faculty Interaction can be found in Table 4.1 in Chapter Four. Detailed descriptions and comparisons of the scales and

items, such as frequencies, can be found in Table F1 in Appendix F. Details about the means and standard deviations of those engagement indicators are presented in Table F2 in Appendix F.

It is worth noting that this study assumes that CISs and U.S. students interpreted vague quantifiers (e.g., "Sometimes," "Often," and "Very often") in the survey item as being the same. However, this assumption should be tested in future studies. A prior study has found that the meaning of the vague quantifiers in NSSE varied from item to item (Nelson Laird, Korkmaz, & Chen, 2008). Future studies should test the extent to which respondents' interpretations of vague quantifiers vary by factors like culture and student class standing. For example, further studies should test whether what CISs believed "Often" or "Very often" is different from what U.S. students believed "Often" or "Very often" in engaging in the same educational activities. Similarly, future studies should test whether first-year student believed "Often" or "Very often" is different from what senior students believed "Often" or "Very often" in their engagement.

To measure students' overall satisfaction with their educational experiences at their institutions, a measure "Overall Institutional Satisfaction" (Cronbach's α among first-year students= .753; Cronbach's α among senior students = .809) was created by averaging two items measuring students' satisfaction together, using a principal component factor analysis with oblimin rotation. Students were asked "*How would you evaluate your entire educational experience at this institution?"* (Question 18) and "*If you could start over again, would you go to the same institution you are now attending?"* (Question 19). Question 18 used four-point Likert scales: 1 (Poor), 2 (Fair), 3 (Good), and 4 (Excellent). Question 19 also used four-point Likert scales: 1 (Definitely no), 2 (Probably no), 3 (Probably yes), and 4 (Definitely yes). Similar to converting the value of engagement Indicators, the four response options for each question were converted into values of 0, 20, 40, and 60. Then, the converted values for each Overall

Institutional Satisfaction component items were averaged to create a score for the Overall Institutional Satisfaction measure. Only students who responded to both component items (Questions 18 and 19) in the Overall Institutional Satisfaction measure obtained an Overall Institutional Satisfaction score. Students' scores for the measure ranged from 0 to 60.

Among first-year students, the mean of CIS Overall Institutional Satisfaction was 40.69 (*SD* = 11.16). The mean of U.S. student Overall Institutional Satisfaction was 44.61 (SD = 13.65). Among senior students, the mean of CIS Overall Institutional Satisfaction was 42.01 (SD = 12.34). The mean of U.S. student Overall Institutional Satisfaction was 44.92 (SD = 14.64). Detailed description and a comparison of the Overall Institutional Satisfaction measure and its items are presented in Appendix F3 in Appendix F.

Psychometric properties of NSSE. Several scholars have extensively examined the validity and reliability of NSSE (Campbell & Cabrera, 2011; Carle, Jaffee, Vaughan, & Eder, 2009; Gonyea, 2005; Kuh, 2001; McCormick & McClenney, 2012; Porter, 2011). Kuh (2009) claimed that the NSSE overall has very good psychometric properties. The individual items in the NSSE have been tested, retested, and modified based on data collected over a decade (Kuh, 2009). Triangulation provides researchers with multiple forms of evidence or data collected in different time spots, which ensures the valid narrative account (Creswell & Miller, 2000). The NSSE also uses triangulation, such as focus group and cognitive interviews, to ensure its validity (Kuh, 2001; Ouimet, Bunnage, Carini, Kuh, & Kennedy, 2004). Additionally, to avoid researcher bias, the NSSE invites a third party—Indiana University Center for Survey Research—to help with survey interface programming, data cleaning, and coding (NSSE, n.d.-c). NSSE has well documented, constantly reviewed, and instantly updated its psychometric portfolio on its website for several years (NSSE, n.d.-e).

NSSE also asks students to self-report their behaviors and approaches toward student engagement activities. There are concerns about the validity of NSSE data and the connections between students' self-reported data and their behaviors (Bowman & Hill, 2010; Porter, 2011; LaNasa, Cabrera, & Trangsrud, 2009). However, many scholars have argued that self-reported data are valid and reliable under certain circumstances, such as when the respondents know the requested information; the information requested is about the respondents' recent behaviors and activities; and the wording of the questions is very clear (Kuh, 2001; Pace, 1984; Noble & Sawyer, 1988). I have confidence that college students are able to report their recent behaviors and activities adequately; nevertheless, I would suggest that readers should use and interpret the findings of this study with caution (Carrell & Willmington, 1996; Kuncel, Credé, & Thomas, 2005; Pike, 1995, 1996).

Data Collection, Sampling Method, and Sample Description

The administration of the NSSE is a collaborative effort between NSSE staff and NSSE participating schools over a 12-month time span (NSSE, 2015). 2015 NSSE registration opened for institutions in early June 2014 and closed at the end of September 2014. NSSE administration for each participating campus opened in winter 2014 or spring 2015 (n.d.-c). NSSE participating institutions provided the NSSE with a population data file including all first-year and senior students, from which the NSSE selected a random sample. Then, the NSSE sent out survey invitations along with other paperwork to selected students in February or March 2015 (NSSE, n.d.-c). Working with the Indiana University Center for Survey Research, the NSSE sent out reminder emails or postcards to non-respondents. Beginning in April 2015, institutions gradually sent their student population file back to the NSSE by uploading it to a secured web portal provided by the NSSE (NSSE, n.d.-c). The survey administration closed on June 1, 2015. In late

summer 2015, the NSSE sent individual school report binders and data files back to participating institutions.

Since the NSSE was launched in 2000, over 1600 institutions and nearly five million students have chosen to participate. In 2015, 315,815 students from 541 U.S. colleges and universities responded to the NSSE (NSSE, 2015). On average, the response rate of the 2015 NSSE among U.S. institutions was 29% (NSSE, 2015).

In this study, I compared CIS and U.S. student engagement, focusing on first-year and senior students. Student class standing (e.g., first-year, senior) used in this study was provided by NSSE participating institutions. Additionally, a question in the 2015 NSSE allowed researchers to identify whether the respondent was an international student or not (Question 31a. *Are you an international student?*). If a respondent reported that he or she was an international student, a following question allowed researchers to identify the student's country of origin (Question 31b. *What is your country of citizenship?*).

After filtering students' countries of origin and only including those who responded to all the demographic questions, engagement questions, and overall institutional satisfaction questions used in this study, this study included 9,297 (3.9%) first-year and senior international students. Among the 9,036 first-year and senior international students who reported their country of origin to the NSSE, those who identified that country as China (1,938 students, 24.4%), Hong Kong (99 students, 1.1%), Macau (four students, nearly 0%), or Taiwan (122 students, 1.4%) were grouped into "Chinese international students" (CISs) for the purposes of this study. Therefore, 2,163 CISs from 279 institutions completed the 2015 NSSE, representing 23.9% of the total international participants.

CIS sample description. There was a slightly greater percentage of first-year CISs (52.8%) than senior CISs (47.2%). Among CIS respondents, females outnumbered males among both first-year and senior CISs (First-year: 56.8% vs. 43.2%; Senior: 58.6% vs. 41.4%). This information on student gender comes from the institution-reported gender identity of participating students. This represents a reversal of the proportion of male versus female CISs studying in the U.S. as compared to two decades ago. Both Lin (1998) and Cao (1997) claimed that the number of male students was dominant among the CIS population in the 1990s.

When examining students by their disciplinary areas, among first-year CISs, students studying business (37.4%) were the most representative group, followed by students majoring in the physical sciences, mathematics, and computer science (11.7%) and engineering (11.2%). Students studying in the social services professions were the least representative group (.5%). Among senior CISs, business (44.5%) was also the dominant major, followed by engineering (10.6%) and the physical sciences, mathematics, and computer science (9.8%). The distribution of CISs among different disciplinary areas is very different from that of CISs a decade ago. Frank (2000) claimed that the disciplinary areas of CISs a decade ago centered on science- and technology- oriented majors, such as the natural sciences, engineering, computer science, and biochemistry. In recent years, the disciplinary areas of CISs have expanded to the social sciences, communications, library sciences, arts, and humanities (Zhao, 2005). The shift in CIS disciplinary areas in the U.S. reflects that the academic interests of CISs have become more diverse.

The proportion of first-year CISs (96.0%) who were enrolled as full-time was larger than that of senior CISs (92.8%). The proportion of CISs who took all courses online in the 2014-15 academic year was nearly equal between first-year and senior CISs (2.2% vs. 2.3%). Thirty-five-

point-one percent of first-year CISs were first-generation college students, and 34.6% of senior CISs were first-generation college students. The definition of first-generation college student in this study is in accord with the one defined in the NSSE—neither parent/those who raised a student having earned a bachelor's degree (NSSE, n.d.-d). A greater percentage of first-year (98.3%) versus senior (74.2%) CISs reported themselves as traditional students (under 24 years old). When asking about their highest level of educational aspiration, 47.7% of first-year and 50.6% of senior CISs responded that they expected to complete a master's degree. More than half of first-year CISs (54.9%) and senior CISs (53.6%) obtained mostly As in their grades. Further details on this comparison can be found in Table 3.1.

U.S. sample description. In the 2015 NSSE, 227,497 participants reported that they were U.S. students. Those 227,497 U.S. students were distributed across 541 institutions in the U.S. To effectively compare the engagement of CISs and U.S. students in the same context, I limited U.S. student samples to those who enrolled in the 279 institutions that had CIS respondents to the 2015 NSSE. Therefore, 158,543 U.S. students were included in this study.

As opposed to the CIS sample, senior U.S. students (59.3%) outnumbered first-year U.S. students (40.7%). There were two times as many female as male respondents among both first-year and senior U.S. students (First-year: 67.7% vs. 32.3%; Senior: 65.5% vs. 35.0%). Again, such information came from the institution-reported gender identity of participating students. Among both first-year and senior U.S. students, the most representative race and ethnicity group was White (First-year: 65.0%; Senior: 67.9%), followed by Hispanic or Latino (First-year: 13.1%; Senior: 11.1%) and Black or African American (First-year: 8.7%; Senior: 8.2%).

The distribution of U.S. students among disciplinary areas differed from that of CISs. Among first-year U.S. students, the most representative disciplinary area among U.S. students

was health (16.8%), followed by business (15.1%) and agriculture and natural resources (11.0%). Among senior U.S. students, the most representative disciplinary area was business (17.0%), followed by health (15.5%) and social sciences (12.0%).

A slightly smaller percentage of senior U.S. students enrolled as full-time (83.4%) compared with first-year U.S. students (95.7%). Overall, the proportion of U.S. students who took all courses online was slightly higher than that of CISs among both first-year and senior students: 10.2% of senior U.S. students took all courses online, nearly three times as many as first-year U.S. students (3.1%). The proportion of first-generation college students among U.S. students was also higher than that of CISs among both first-year and senior students: 43.6% of first-year and 47.5% of senior U.S. students were first-generation college students. Ninety-four-point-two percent of first-year and 61.3% of senior U.S. students were traditional students. Forty-point-one percent of first-year and 43.9% of senior U.S. students expected to complete a master's degree. Nearly half of first-year U.S. (48.0%) and senior U.S. students (52.7%) obtained mostly As in their grades. See Table 3.1 for details.

Table 3.1

Selected Characteristics of Chinese International and U.S. Students

	CISs (N = 2,163)				U.S. students (N = 158,543)			
	First-year		Senior		First-year		Senior	
	Count	%	Count	%	Count	%	Count	%
Gender Identity								
Male	493	43.2%	423	41.4%	30,035	32.3%	47,124	35.0%
Female	649	56.8%	598	58.6%	62,953	67.7%	87,355	65.0%
Disciplinary areas								
Arts & Humanities	116	10.4%	78	7.7%	8,134	8.8%	13,366	10.0%
Biological Sciences, Agriculture, & Natural Resources	44	4.0%	31	3.1%	10,165	11.0%	11,563	8.7%
Physical Sciences, Mathematics, & Computer Science	130	11.7%	99	9.8%	5,066	5.5%	6,185	4.6%
Social Sciences	103	9.3%	83	8.2%	9,366	10.2%	16,415	12.3%
Business	416	37.4%	449	44.5%	13,926	15.1%	22,686	17.0%
Communications, Media, & Public Relations	44	4.0%	47	4.7%	3,876	4.2%	5,819	4.4%
Education	22	2.0%	10	1.0%	7,683	8.3%	10,997	8.3%
Engineering	124	11.2%	107	10.6%	6,528	7.1%	8,669	6.5%
Health Professions	29	2.6%	41	4.1%	15,456	16.8%	20,690	15.5%
Social Service Professions	5	.5%	8	.8%	4,887	5.3%	7,213	5.4%
All Other	25	2.3%	43	4.3%	3,973	4.3%	9,321	7.0%
Undecided, undeclared	53	4.8%	12	1.2%	3,056	3.3%	365	.3%
Full time								
No	46	4.0%	74	7.2%	3,961	4.3%	22,381	16.6%
Yes	1,096	96.0%	947	92.8%	89,043	95.7%	112,112	83.4%
Students taking all courses online								
No	1,103	97.8%	989	97.7%	89,443	96.9%	119,767	89.8%
Yes	25	2.2%	23	2.3%	2,894	3.1%	13,635	10.2%
First-Generation Status (neither parent/guardian holds a bachelor's degree)								
No	735	64.9%	665	65.4%	52,236	56.4%	70,369	52.5%
Yes	398	35.1%	352	34.6%	40,444	43.6%	63,761	47.5%
Traditional Age (under 24 years old)								
Nontraditional students	19	1.7%	259	25.8%	5,390	5.8%	51,582	38.7%
Traditional students	1,101	98.3%	746	74.2%	87,189	94.2%	81,729	61.3%
Educational aspiration								
Bachelor's degree (B.A., B.S., etc.) or less	399	35.2%	361	35.6%	33,439	36.1%	44,998	33.6%
Master's degree (M.A., M.S., etc.)	540	47.7%	513	50.6%	37,073	40.1%	58,758	43.9%
Doctoral or professional degree (Ph.D., J.D., M.D., etc.)	193	17.0%	140	13.8%	21,989	23.8%	30,208	22.5%
Grades								
Mostly A grades	626	54.9%	547	53.6%	44,520	48.0%	70,715	52.7%

Mostly B grades	461	40.4%	434	42.5%	40,247	43.4%	56,473	42.1%
Mostly C grades or lower	54	4.7%	40	3.9%	8,047	8.7%	7,014	5.2%
Racial and ethnic identification (U.S. students only)								
American Indian or Alaska Native	--	--	--	--	405	.5%	796	.6%
Asian	--	--	--	--	4,045	4.8%	5,350	4.3%
Black or African American	--	--	--	--	7,357	8.7%	10,180	8.2%
Hispanic or Latino	--	--	--	--	11,165	13.1%	13,716	11.1%
Native Hawaiian or Other Pacific Islander	--	--	--	--	322	.4%	558	.5%
White	--	--	--	--	55,255	65.0%	83,890	67.9%
Other	--	--	--	--	39	.0%	26	.0%
Two or more races/ethnicities	--	--	--	--	3,319	3.9%	3,663	3.0%
Unknown	--	--	--	--	3,059	3.6%	5,396	4.4%

Analytical Methods

IBM SPSS Statistics was used to analyze the NSSE data. All institutional and student information was de-identified in the received NSSE data. Specific analytical methods used to answer each research question are presented as follows.

1. How frequently do CISs utilize effective learning strategies, collaborative learning, and student-faculty interaction as they study in colleges and universities in the U.S.? To what extent do CISs and U.S. students vary in learning strategies, collaborative learning, and student-faculty interaction, controlling for student demographic characteristics, educational aspiration, and grades? To answer this research question, descriptive analyses were utilized to examine CIS performance in the following three engagement indicators in the 2015 NSSE: Learning Strategies, Collaborative Learning, and Student-faculty Interaction. The frequencies of individual items in Learning Strategies, Collaborative Learning, and Student-faculty Interaction of CISs and U.S. students were examined. The frequencies of first-year students and senior students were examined separately.

To answer the second part of this research question about the variation in Learning Strategies, Collaborative Learning, and Student-faculty Interaction between CISs and U.S.

students, the mean differences between first-year CISs and first-year U.S. students in Learning Strategies, Collaborative Learning, and Student-faculty Interaction were calculated and compared to the mean differences in those three engagement indicators between senior CISs and senior U.S. students. Additionally, a set of Ordinary Least Squares (OLS) regression with Learning Strategies, Collaborative Learning, and Student-faculty Interaction as dependent variables were conducted separately, controlling for student demographic characteristics, educational aspiration, and grades. Because student demographic characteristics, educational aspiration, and grades may have effects on dependent variables and due to the fact that I wanted to remove their effects from the equation, the following variables were entered into those OLS regression models as control variables: gender identity, disciplinary area, age, enrollment status, taking all courses online, first-generation status, educational aspiration, and grades. All control variables were grand-mean centered prior to entry into this model to avoid the issue of multicollinearity. First-year students and senior students were examined separately.

It is worth noting that, before making decisions about using OLS regression models, I first examined the necessity of using multilevel modeling to answer this research question. Given the data collecting methods of the 2015 NSSE, students were nested within their institutions. As described previously, NSSE participating institutions submitted all of their first-year and senior students' population data file to the NSSE. Then, the NSSE selected a random sample from the institutional population data file based on its undergraduate enrollment, rather than randomly selecting students nationwide (NSSE, n.d.-c). That means that the 2015 NSSE data may have a hierarchical or clustered structure. Compared to an OLS regression model, multilevel modeling or Hierarchical Linear Modeling (HLM) has many advantages, such as taking into account the hierarchical nature of the data; simultaneously modeling all levels of interest, such as individual,

major, and institutional levels; and investigating intra-level interactions (Burstein, 1980; Rocconi, 2013; Raudenbush & Bryk, 2002). Therefore, the intra-class correlation (ICC) coefficient was calculated to examine whether using multilevel modeling is necessary for answering this research question or not (Hox, 1998).

Among the 279 institutions with CISs respondents, 59 had at least ten CIS respondents. I selected those 59 NSSE participating institutions and calculated the ICCs for Learning Strategies, Collaborative Learning, and Student-faculty Interaction. The between-group variance (τ_0^2) of Learning Strategies was 2.539, and the within-group variance (σ_0^2) of Learning Strategies was 206.171. See the calculation of the intra-class correlation coefficient below:

$$\text{Intra-class Correlation Coefficient} = \frac{\tau_0^2}{\tau_0^2 + \sigma_0^2} = \frac{2.539}{2.539 + 2.6.171} = 1.2\%$$

This means that 1.2% of the variance in Learning Strategies can be attributed to differences between institutions. The between-group variance (τ_0^2) of Collaborative Learning was 6.095, and the within-group variance (σ_0^2) of Collaborative Learning was 196.605. The ICC for Collaborative Learning was 3.0%, which meant that 3.0% of the variance in Collaborative Learning can be attributed to differences between institutions. Additionally, the between-group variance (τ_0^2) of Student-faculty Interaction was 7.014, and the within-group variance (σ_0^2) of Student-faculty Interaction was 237.312. The ICC for Student-faculty Interaction was 2.9%, which meant that 2.9% of the variance in Student-faculty Interaction can be attributed to differences between institutions.

Based on the ICC cutoffs proposed by Mass and Hox (2004) (Small: .10; Medium: .20; and large: .30), the ICCs of Learning Strategies (1.2%), Collaborative Learnings (3.0%), and Student-faculty Interactions (2.9%) were very small. Additionally, because this study mainly focused on individual- rather than institution-level variations in Learning Strategies,

Collaborative Learnings, and Student-faculty Interactions, and because it did not concentrate on investigating the influence of colleges or universities on students, it did not use multilevel modeling to answer this research question. Instead, it used a single-level statistical model—an OLS regression with students as the unit of analysis. The OLS regression, an important and widely used method in multivariate analyses, allows researchers to analyze the relationship among multiple independent variables and a dependent variable that are correlated with each other to varying degrees (Burstein, 1980; Tabachnick & Fidell, 2013). Thus, OLS regression models were used to answer this research question.

Taking the model with Learning Strategies as the dependent variable as an example, the OLS regression model was:

$$\text{Learning Strategies} = a + b_1(\text{CISs}) + b_2(\text{Female}) + b_3(\text{Disciplinary areas}) + b_4(\text{Traditional age}) + b_5(\text{Full-time}) + b_6(\text{Taking all courses online}) + b_7(\text{First-generation}) + b_8(\text{Educational aspiration}) + b_9(\text{Grades}) + e$$

These four assumptions of the OLS regression were examined: Multivariate normality, linearity, homoscedasticity, and independence (Tabachnick & Fidell, 2013). When examining the normality of these OLS models, the residuals of the dependent variable Learning Strategies were not strictly normally distributed but were negatively skewed. Also, the residuals of the dependent variable Student-faculty Interaction were not strictly normally distributed but were positively skewed. Läärä (2009) argued that most statistical techniques based on normality are robust enough against violation. Additionally, the Central Limit Theorem states that "the distribution of the sum (or average) of a large number of independent, identically distributed variables will be approximately normal, regardless of the underlying distribution" (University of Alabama in Huntsville, n.d.). This study used a large data set with a large number of dependent and identical

variables. Based on the Central Limit Theorem, approximate normality can be assumed and the negatively skewed dependent variable Learning Strategies and the positively skewed dependent variable Student-faculty Interaction will not influence the robustness of the OLS models in this study.

2. What is the relationship between CIS learning strategies, collaborative learning, student-faculty interaction, and their overall institutional satisfaction? To answer this research question, an OLS regression model was conducted to examine the relationship between Learning Strategies, Collaborative Learning, Student-faculty Interaction and Overall Institutional Satisfaction among CISs, controlling for student demographic characteristics. Similar to answering the first research question, the intra-class correlation (ICC) coefficient was calculated among CIS samples to examine whether using a multilevel modeling was necessary for answering this research question or not (Hox, 1998).

Those 59 NSSE participating schools that had at least ten CISs were selected to compute the intra-class correlation among CIS samples. The between-group variance (τ_0^2) of CIS Overall Institutional Satisfaction was 3.638, and the within-group variance (σ_0^2) of CIS Overall Institutional Satisfaction was 133.811. See the calculation of the intra-class correlation coefficient below:

$$\text{Intra-class Correlation Coefficient} = \frac{\tau_0^2}{\tau_0^2 + \sigma_0^2} = \frac{3.638}{3.638 + 133.811} = 2.6\%$$

This means that 2.6% of the variance in CISs' Overall Institutional Satisfaction can be attributed to differences between institutions. Based on the ICC cutoffs proposed by Mass and Hox (2004) (Small: .10; Medium: .20; and large: .30), the ICC among CIS samples in this study (2.6%) was very small. Additionally, because this study mainly focused on individual- rather than institution-level variations in CISs' Overall Institutional Satisfaction, and because it did not concentrate on

investigating the influence of colleges or universities on students, it did not use multilevel modeling.

Instead, an OLS regression was used to answer this research question. The dependent variable in this model was Students' Overall Institutional Satisfaction measure, which was standardized prior to entry into the model. The independent variables included Learning Strategies, Collaborative Learning, and Student-faculty Interaction, with a set of control variables of demographic characteristics, educational aspirations, and grades of CISs: gender identity, disciplinary area, age, enrollment status, taking all courses online, first-generation status, educational aspiration, and grades. These CIS characteristics may also have effects on CIS Overall Institutional Satisfaction. I wanted to remove those effects from the regression equation and enter them into the regression model as control variables. All control variables were grand-mean centered prior to entry into this model to avoid the issue of multicollinearity. Again, first-year students and senior students in Chinese and U.S. student groups were examined separately. These four assumptions of the OLS regression were also examined: Multivariate normality, linearity, homoscedasticity, and independence (Tabachnick & Fidell, 2013). Both the model of first-year students and the model of senior students met the assumption of OLS regression.

The OLS regression model was:

$$\text{Overall Institutional Satisfaction} = a + b_1(\text{Learning Strategies}) + b_2(\text{Collaborative Learning}) + b_3(\text{Student-faculty Interaction}) + b_4(\text{Female}) + b_5(\text{Disciplinary areas}) + b_6(\text{Traditional age}) + b_7(\text{Full-time}) + b_8(\text{Taking all courses online}) + b_9(\text{First-generation}) + b_{10}(\text{Educational aspiration}) + b_{11}(\text{Grades}) + e$$

3. How does the relationship between student utilization of learning strategies, collaborative learning, student-faculty interaction, and overall institutional satisfaction

vary between CISs and U.S. students? Another OLS regression was conducted to examine the relationship between the three Engagement Indicators (Learning Strategies, Collaborative Learning, and Student-faculty Interaction) and Overall Institutional Satisfaction, with interaction effects between engagement indictors and students' countries of origin. Three interaction terms between the three engagement indicators and students who identified themselves as CISs or U.S. students (displayed as "Countries of Origin" in the model below) were created and entered into the OLS regression separately based on the analyses of the third research question. The dependent variable—students' Overall Institutional Satisfaction—was standardized prior to entry into the model. The control variables used in this model were the same as those used in answering the third research question. All control variables were grand-mean centered prior to entry into this model to avoid the issue of multicollinearity. As with the previous three research questions, first-year students and senior students were examined separately. The OLS regression model was:

$$\text{Overall Institutional Satisfaction} = a + b_1(\text{Learning Strategies}) + b_2(\text{Collaborative Learning}) + b_3(\text{Student-faculty Interaction}) + b_4(\text{Countries of Origin}) + b_5(\text{LS} \times \text{Countries of Origin}) + b_6(\text{Collaborative Learning} \times \text{Countries of Origin}) + b_7(\text{Student-faculty Interaction} \times \text{Countries of Origin}) + b_8(\text{Female}) + b_9(\text{Disciplinary areas}) + b_{10}(\text{Traditional age}) + b_{11}(\text{Full-time}) + b_{12}(\text{Taking all courses online}) + b_{13}(\text{First-generation}) + b_{14}(\text{Educational aspiration}) + b_{15}(\text{Grades}) + e$$

4. To what extent do first-year and senior CISs differ in their utilization of learning strategies, collaborative learning, student-faculty interaction, after controlling for student demographic characteristics, educational aspiration, and grades? To what extent do first-year and senior CISs differ in overall institutional satisfaction, controlling for CIS learning

strategies, collaborative learning, student-faculty interaction, and a set of student characteristics? The intra-class correlation coefficients of Learning Strategies, Collaborative Learning, and Student-faculty Interaction among CISs were also examined. The between-group variance (τ_0^2) of CIS Learning Strategies was 5.297, and the within-group variance (σ_0^2) of CIS Learning Strategies was 206.583. The calculation of intra-class correlation coefficient was as follows: Intra-class Correlation Coefficient = $\frac{\tau_0^2}{\tau_0^2+\sigma_0^2} = \frac{5.297}{5.297+206.583}$ = 2.5%. That means 2.5% of the variance in CIS Learning Strategies could be attributed to the differences between institutions.

Additionally, the between-group variance (τ_0^2) of CIS Collaborative Learning was 2.140, and the within-group variance (σ_0^2) of CIS Collaborative Learning was 163.876. The calculation of the intra-class correlation coefficient was as follows: Intra-class Correlation Coefficient = $\frac{\tau_0^2}{\tau_0^2+\sigma_0^2} = \frac{2.140}{2.140+163.876}$ = 1.3%. That means 1.3% of the variance in CIS Collaborative Learning could be attributed to the differences between institutions.

The between-group variance (τ_0^2) of CIS Student-faculty Interaction was 2.467, and the within-group variance (σ_0^2) of CIS Student-faculty Interaction was 212.590. The calculation of intra-class correlation coefficient was as follows:

Intra-class Correlation Coefficient = $\frac{\tau_0^2}{\tau_0^2+\sigma_0^2} = \frac{2.467}{2.467+212.590}$ = 1.1%. That means 1.1% of the variance in CIS Student-faculty Interaction can be attributed to the differences between institutions.

Based on the ICC cutoffs proposed by Mass and Hox (2004) (Small: .10; Medium: .20; and large: .30), the ICC among the CIS samples shown above was very small. Additionally, because this study mainly focused on variations in CIS learning strategies, collaborative learning,

student-faculty interaction, and overall institutional satisfaction on an individual level, rather than on an institutional level, and because this study did not concentrate on investigating the influence of colleges or universities on students, multilevel modeling was not used when answering this research question.

Thus, four additional OLS regression models were used to examine the variations in Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction between first-year CISs and senior CISs, controlling for other demographic and course characteristics. The dependent variables, Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction, were standardized prior to entry into the models. Again, I wanted to hold constant these variables that I was not interested in but which may have an effect on the dependent variable. For the models with a dependent variable of Learning Strategies, the model with a dependent variable of Collaborative Learning, and the model with a dependent variable of Student-faculty Interaction, the control variables entered into these three models included gender identity, disciplinary area, age, enrollment status, students taking all courses online, first-generation status, educational aspiration, and grades. For the model with Overall Institutional Satisfaction, the control variables not only included student demographic characteristics, educational aspiration, and grades, they also included Learning Strategies, Collaborative Learning, and Student-faculty Interaction, because these three engagement indicators also could have effects on student Overall Institutional Satisfaction and should be controlled. All control variables were grand-mean centered prior to entry into this model to avoid the issue of multicollinearity.

Taking the model with CIS Learning Strategies as the dependent variable and the model with CIS Overall Institutional Satisfaction as the dependent variable as examples, the OLS regression model were:

Learning Strategies = $a + b_1$ (Senior students) + b_2 (Female) + b_3 (Disciplinary areas) + b_4 (Traditional age) + b_5 (Full-time) + b_6 (Taking all Courses Online) + b_7 (First-generation) + b_8 (Educational aspiration) + b_9 (Grades) + e

Overall Institutional Satisfaction = $a + b_1$ (Learning Strategies) + b_2 (Collaborative Learning) + b_3 (Student-faculty Interaction) + b_4 (Senior students) + b_5 (Female) + b_6 (Disciplinary areas) + b_7 (Traditional age) + b_8 (Full-time) + b_9 (Taking all Courses Online) + b_{10} (First-generation) + b_{11} (Educational aspiration) + b_{12} (Grades) + e

5. Does a student's country of origin (China vs. the U.S.) moderate the impact of class standing (first-year vs. senior) on learning strategies, collaborative learning, student-faculty interaction, and overall institutional satisfaction? Four OLS regression models were used to answer the fifth research question with Learning Strategies, Collaborative Learning, and Student-faculty Interaction, and Overall Institutional Satisfaction entered as the dependent variables individually. An interaction term between students who identified themselves as CISs or U.S. and students' class standings (first-year vs. senior) (interaction term: Countries of Origin × Class standing) was entered into each OLS regression model based on analyses of the fifth research question. The dependent variables were standardized prior to entry into the model. The control variables used in each model were the same as those used in answering the fifth research question. Again, all control variables were grand-mean centered prior to entry into this model to avoid the issue of multicollinearity.

Taking the model with the dependent variable Collaborative Learning and the model with the dependent variable Overall Institutional Satisfaction as examples, the OLS regression model were:

$$\text{Collaborative Learning} = a + b_1(\text{Senior students}) + b_2(\text{Countries of Origin}) + b_3(\text{Countries of Origin} \times \text{Class standing}) + b_4(\text{Female}) + b_5(\text{Disciplinary areas}) + b_6(\text{Traditional age}) + b_7(\text{Full-time}) + b_8(\text{Taking all courses online}) + b_9(\text{First-generation}) + b_{10}(\text{Educational aspiration}) + b_{11}(\text{Grades}) + e$$

$$\text{Overall Institutional Satisfaction} = a + b_1(\text{Learning Strategies}) + b_2(\text{Collaborative Learning}) + b_3(\text{Senior students}) + b_4(\text{Senior students}) + b_5(\text{Countries of Origin}) + b_6(\text{Countries of Origin} \times \text{Class standing}) + b_7(\text{Female}) + b_8(\text{Disciplinary areas}) + b_9(\text{Traditional age}) + b_{10}(\text{Full-time}) + b_{11}(\text{Taking all courses online}) + b_{12}(\text{First-generation}) + b_{13}(\text{Educational aspiration}) + b_{14}(\text{Grades}) + e$$

Study Limitations

Despite a set of promising findings, this study has five primary limitations. First, the convenience sampling used by NSSE may have influenced the random sample in this study. Institutions self-select to register and administer NSSE on their campuses rather than NSSE randomly selecting students in U.S. colleges and universities nationwide. First-year and senior student participants were randomly selected by NSSE based on the student population data file provided by NSSE participating institutions. Therefore, the generalizability of this study might be a concern. Some caution is required when institutional researchers and policy makers apply the findings of this study among colleges and universities that enroll a disproportionally small number of international students.

Second, this study focuses on the undergraduate experiences of CISs and U.S. students. However, the student country of origin was self-reported. NSSE data offers no information on the type of visa, such as F-1 student or J-1 exchange visitor visas, held by Chinese students who reported themselves as international students. Additionally, I was not able to identify Chinese students who reported themselves as international students but had pursued primary and secondary education in the U.S. The collegiate experiences of that group of Chinese students are different from the experiences of CISs who mainly received their secondary education in China, Hong Kong, Macau, or Taiwan. Similarly, I was not able to identify U.S. students who received secondary education outside the U.S. The collegiate experiences of those U.S. students may also be different from the experiences of their peers who received both their secondary and postsecondary education in the U.S.

Third, because this study used the 2015 NSSE as a secondary data source, researchers and readers may not be able to explore further information about the three NSSE engagement indicators (Learning Strategies, Collaborative Learning, and Student-faculty Interaction) used in this study unless they rely on the three or four variables included in the scales. The Learning Strategies scale contains three variables that measure the strategies students use to identify key information, take notes, and summarize course materials in learning. However, from the 2015 NSSE dataset, researchers and readers cannot obtain information regarding specific learning strategies used by students, or to learn about general learning strategies that can promote learning across knowledge domains (Ames & Archer, 1988), such as self-monitoring (Weinstein & Mayer, 1986) and self-planning (Ames & Archer, 1988).

Additionally, regarding the Collaborative Learning scale, researchers and readers will not be able to identify the demographic characteristics of those who collaborated with the CISs and

U.S. students examined in this study, let alone investigate why CISs or U.S. students chose to collaborate with specific groups of students rather than others.

Similar issues apply to the Student-faculty Interaction scale. There was no further information regarding in-class or personal interactions between faculty members and students in the 2015 NSSE dataset. Although the Student-faculty Interaction scale included four variables that measure students' interactions with faculty members in the context of career planning, time spent outside the classroom, non-course work, and academic performance, interactions such as discussions about students' personal lives with faculty members or faculty-student mentorship cannot be interpreted from the NSSE 2015 dataset.

Fourth, the Overall Institutional Satisfaction measure was composed of only two items, which might be a concern for model identifiability. According to Anderson and Rubin (1956), it is usually recommended to include a minimum of three indicators in a factor. Otherwise, the factor may not meet the lower limit of model identifiability.

Using a small number of variables to create a scale may lead to some debates among scholars regarding the validity and reliability of the measures. However, there are still many studies that use two items in one scale. For example, McCormick, Sarraf, BrckaLorenz, and Haywood (2009) created a scale named "Overall Satisfaction with College (OSC)" that measured college students' overall satisfaction using the same two items in the NSSE as I used in this study (p. 12), and they obtained a factor with higher inner reliability of OSC (Cronbach's $\alpha = .79$). Moreover, using the 2008 NSSE dataset, Korobova (2012) utilized the same two items to create a measure named "satisfaction by entire educational experience." In the "Recommendations for Future Research" section in Korobova's (2012) dissertation (p. 142), she

recommended combining more variables to measure satisfaction with the entire educational experience.

Additionally, more evidence about correlations between items and the reliability of a measure can prove that Overall Institutional Satisfaction is a valid measure in this study. The two items associated with the Overall Institutional Satisfaction measure were strongly correlated among both first-year and senior students (Pearson's correlation coefficient among first-year students = .609; Pearson's correlation coefficient among senior students = .685). Additionally, the first-year students' Cronbach's α equaled .753, and senior students' Cronbach's α equaled .809, which can be regarded as satisfactory (Bland & Altman, 1997). Therefore, the Overall Institutional Satisfaction measure in this is valid and reliable, though it only included two items.

Fifth, current data does not allow me to track an individual student's changes in engagement from his or her first-year to senior year, especially among CISs. In 2015, the NSSE began to ask international students to report their countries of origin.

Chapter Four: Results

This chapter is organized according to the order of the research questions in this study. The results associated with each research question are presented individually. This chapter is concluded with a brief summary of the key findings, and these summaries provide the context of the discussions, implementations, and conclusions described in the final chapter.

1. How frequently do CISs utilize effective learning strategies, collaborative learning, and student-faculty interaction as they study in colleges and universities in the U.S.? To what extent do CISs and U.S. students vary in learning strategies, collaborative learning, and student-faculty interaction, controlling for student demographic characteristics, educational aspiration, and grades?

Descriptive analysis results. Table 4.1 showed the means and standard deviations of Learning Strategies, Collaborative Learning, and Student-faculty Interaction among CISs and U.S. students. For these three engagement indicators, first-year CISs had the highest mean score in Learning Strategies (M = 40.39, SD = 13.03), followed by the mean score of Collaborative Learning (M = 33.50, SD = 13.11); they had the lowest mean score in Student-faculty Interaction (M = 25.71, SD = 14.62). Similar to the pattern of first-year CISs, first-year U.S. students had the highest mean score in Learning Strategies (M = 40.23, SD = 14.18), followed by the mean sore of Collaborative Learning (M = 33.26, SD = 14.17); they also had the lowest mean score in Student-Faculty Interaction (M = 21.32, SD = 14.75). Among senior students, CISs had the highest mean score in Learning Strategies (M = 39.97, SD = 12.34), followed by the mean score of Collaborative Learning (M = 33.86, SD = 12.56); they also had the lowest mean score in Student-Faculty Interaction (M = 27.60, SD = 14.40). Similar to the pattern of senior CISs, senior U.S. students had the highest mean score in Learning Strategies (M = 40.55, SD = 14.81),

followed by the mean score of Collaborative Learning (*M* = 33.04, *SD* = 14.58); they also had the lowest mean score in Student-Faculty Interaction (*M* = 24.62, *SD* = 16.47). The frequencies of individual items of each engagement indicator can be found in Table F1 in Appendix F.

Table 4.1

Means and Standard Deviations of the Main Measurements

	First-year				Senior			
	CISs		U.S. Students		CISs		U.S. Students	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Learning Strategies (First-year students' α = .770; Senior students' α = .783)	40.39	13.03	40.23	14.18	39.97	12.34	40.55	14.81
Collaborative Learning (First-year students' α = .816; Senior students' α = .808)	33.50	13.11	33.26	14.17	33.86	12.56	33.04	14.58
Student-Faculty Interaction (First-year students' α = .832; Senior students' α= .855)	25.71	14.62	21.32	14.75	27.60	14.40	24.62	16.47

When the variation of Learning Strategies between first-year CISs and first-year U.S. students was examined, the OLS regression results showed that CISs' employment of Learning Strategies was .07 standard deviation higher than that of U.S. students (p <.05), controlling for all other variables. A significant regression equation was found ($F(21, 89230) = 224.003$, p < .001) with an adjusted R^2 of .05, which meant that 5% of the variance in Learning Strategies can be explained by this model. This finding did not support the hypothesis. Hypothesis One indicated that first-year CISs would score similarly to first-year U.S. students in utilizing effective learning strategies. However, the finding of this OLS regression model showed that

first-year CISs scored higher in utilizing effective learning strategies than first-year U.S. students did.

Among senior students, the OLS regression results showed that CISs' employment of Learning Strategies was .09 higher than that of U.S. students (p <.01), controlling for all other variables. A significant regression equation was found ($F(21, 128095) = 433.405$, $p < .001$) with an adjusted R^2 of .07, which meant that 7% of the variance in Learning Strategies can be explained by this model. This finding also did not support the hypothesis. Hypothesis One indicated that senior CISs would score similarly to senior U.S. students in utilizing effective learning strategies. However, the finding of this OLS regression showed that senior CISs scored higher in utilizing effective learning strategies than senior U.S. students did. Please see more details about the regression model in Table 4.2.

Differed from the overall pattern of Learning Strategies, both first-year and senior CISs scored higher in "Asked another student to help you understand course material" and scored lower in the item "Identified key information from reading assignments" than did U.S. students. Discussion about such variance will be presented in Chapter Five. Please see more details about individual items in Table F2 in Appendix F.

Table 4.2

Regression Results of Student Characteristics and Learning Strategies

	Learning Strategies[a]					
	First-year			Senior		
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	.07	.03	***	-.05	.00	***
CISs	.07	.03	*	.09	.03	**
Female	.15	.01	***	.17	.01	***
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	.05	.01	***	.06	.01	***
Physical Sciences, Mathematics, and Computer Science	-.05	.02	**	-.16	.02	***
Social Sciences	.05	.01	***	.02	.01	
Business	.04	.01	**	-.01	.01	
Communications, Media, and Public Relations	.05	.02	*	-.07	.02	***
Education	.05	.02	**	.04	.01	**
Engineering	-.09	.02	***	-.18	.01	***
Health Professions	.14	.01	***	.13	.01	***
Social Service Professions	.07	.02	***	.03	.01	
Other	-.03	.02		-.03	.01	*
Undecided	-.11	.02	***	-.07	.06	
Traditional age	-.34	.02	***	-.30	.01	***
Full-time	-.06	.02	**	-.02	.01	*
Taking courses all online	.19	.02	***	.09	.01	***
First generation students	.04	.01	***	.08	.01	***
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.13	.01	***	-.16	.01	***
Doctoral degree	.11	.01	***	.15	.01	***
Grades (As = reference group)						
Mostly Bs	-.14	.01	***	-.10	.01	***
Cs or lower	-.35	.01	***	-.30	.01	***
R	.22			.26		
Adjusted R^2	.05			.07		
F	224.003***			433.405***		

Notes. ** p<.05, ** p<.01, ***p<.001, two-tailed.*

a. The continuous variable Learning Strategies was standardized prior to entry into the model.

When the variation of Learning Strategies between first-year CISs and first-year U.S. students was examined, the OLS regression results showed that CISs' engagement in Collaborative Learning was not statistically significantly different from that of U.S. students. A significant regression equation was found ($F(21, 88875) = 362.894$, $p < .001$) with an adjusted R^2 of .08, which meant that 8% of the variance in Collaborative Learning can be explained by this model. This finding did not support the hypothesis. Hypothesis One stated that first-year CISs would score higher in employing collaborative learning than would first-year U.S. students. However, the finding of this OLS regression model indicated that first-year CIS Collaborative Learning was not significantly different from that of U.S. students.

Among senior students, the OLS regression results showed that CISs' engagement in Collaborative Learning was not statistically significantly different from that of U.S. students. A significant regression equation was found ($F(21, 127754) = 1054.044$, $p < .001$) with an adjusted R^2 of .15, which meant that 15% of the variance in Collaborative can be explained by this model. This finding also did not support the hypothesis. Hypothesis One indicated that senior CISs would score higher in employing Collaborative Learning than senior U.S. students do. However, the finding of this OLS regression showed that senior CIS Collaborative Learning was not significantly different from that of U.S. students. Please see more details about the regression model in Table 4.3.

When the variation of Student-faculty Interaction between CISs and U.S. students was examined, the OLS regression results of first-year students showed that CISs' interaction with faculty members was .26 standard deviation higher than that of U.S. students ($p <.001$), controlling for all other variables. A significant regression equation was found ($F(21, 89484) = 104.389$, $p < .001$) with an adjusted R^2 of .02, which meant that 2% of the variance in Student-

faculty Interaction can be explained by this model. This finding did not support the hypothesis. Hypothesis One indicated that first-year CISs would score lower in Student-faculty Interaction than would first-year U.S. students. However, the finding of this OLS regression showed that first-year CISs scored higher in Student-faculty Interaction than their first-year U.S. students did. Please see more details about the regression model in Table 4.3.

Among senior students, the OLS regression results showed that CISs' interaction with faculty members was .16 higher than that of U.S. students (p <.001), controlling for all other variables. A significant regression equation was found ($F(21, 128588) = 851.439$, $p < .001$) with an adjusted R^2 of .12, which meant that 12% of the variance in Student-faculty Interaction can be explained by this model. This finding also did not support the hypothesis. Hypothesis One indicated that senior CISs will score lower in Student-faculty Interaction than senior U.S. students do. However, this finding of the OLS regression showed senior CISs scored higher in Student-faculty Interaction than their senior U.S. students. Please see more details about the regression model in Table 4.4.

Both first-year CISs and senior CISs had much higher interaction with faculty member than did their U.S. peers, a finding which may not fit with faculty members' assumptions. It may be more helpful to examine the pattern of the individual items of the Student-faculty Interaction scale. By examining the means for individual items, I found that among both first-year and senior students, CISs had lower means scores of the item "talked about career plans with a faculty member." However, CISs had higher mean scores (p <.001) than did their U.S. peers among both first-year and senior students in the following three items: "Worked with a faculty member on activities other than coursework (committees, student groups, etc.)," "Discussed course topics, ideas, or concepts with a faculty member outside of class," and "Discussed your

academic performance with a faculty member." Please see more details about the individual items of Student-faculty Interaction in Table F1 in Appendix F.

Table 4.3

Regression Results of Student Characteristics and Collaborative Learning

	Collaborative Learning[a]					
	First-year			Senior		
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	-.11	.00	***	.08	.00	***
CISs	-.04	.03		-.09	.03	
Female	.04	.01	***	.02	.01	**
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	.30	.01	***	.32	.01	**
Physical Sciences, Mathematics, and Computer Science	.17	.02	***	.32	.01	***
Social Sciences	.04	.01	**	.04	.01	***
Business	.23	.01	***	.34	.01	***
Communications, Media, and Public Relations	.14	.02	***	.22	.01	***
Education	.20	.02	***	.39	.01	***
Engineering	.46	.02	***	.68	.01	***
Health Professions	.29	.01	***	.45	.01	***
Social Service Professions	.07	.02	***	.15	.01	***
Other	.13	.02	***	.19	.01	***
Undecided	-.03	.02		.29	.05	***
Traditional age	.43	.02	***	.25	.01	***
Full-time	.22	.02	***	.28	.01	***
Taking courses all online	-.66	.02	***	-.72	.01	***
First generation students	-.05	.01	***	-.03	.01	***
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.10	.01	***	-.10	.01	***
Doctoral degree	.07	.01	***	.04	.01	***
Grades (As = reference group)						
Mostly Bs	.00	.01		.05	.01	***
Cs or lower	-.20	.01	***	-.07	.01	***
R	.28			.38		
Adjusted R^2	.08			.15		
F	362.894***			1054.044***		

Notes. ** p<.05, ** p<.01, ***p<.001, two-tailed.*

a. The continuous variable Collaborative Learning was standardized prior to entry into the model.

Table 4.4

Regression Results of Student Characteristics and Student-faculty Interaction

	Student-faculty Interaction[a]					
	First-year			Senior		
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	-.18	.00	***	.14	.00	***
CISs	.26	.03	***	.16	.03	***
Female	-.07	.01	***	-.02	.01	**
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	-.08	.01	***	-.18	.01	***
Physical Sciences, Mathematics, and Computer Science	-.16	.01	***	-.16	.02	***
Social Sciences	-.13	.01	***	-.18	.01	***
Business	-.02	.01		-.23	.01	***
Communications, Media, and Public Relations	.03	.01		.03	.02	*
Education	.06	.01	***	.05	.01	***
Engineering	-.22	.01	***	-.26	.01	***
Health Professions	-.05	.01	***	-.11	.01	***
Social Service Professions	.02	.01		-.09	.01	***
Other	-.03	.01		-.11	.01	***
Undecided	-.20	.01	***	-.03	.05	
Traditional age	.22	.01	***	.29	.01	***
Full-time	.11	.01	***	.23	.01	***
Taking courses all online	-.20	.01	***	-.50	.01	***
First generation students	.06	.01	***	.02	.01	**
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.08	.01	***	-.16	.01	***
Doctoral degree	.14	.01	***	.26	.01	***
Grades (As = reference group)						
Mostly Bs	-.02	.01	**	-.09	.01	***
Cs or lower	-.08	.01	***	-.21	.01	***
R	.16			.35		
Adjusted R^2	.02			.12		
F	104.389***			851.439***		

Notes. * *p*<.05, ** *p*<.01, ***p<.001, two-tailed.

a. The continuous variable Student-faculty Interaction was standardized prior to entry into the model.

The second half of Hypothesis One indicated that the differences in utilizing effective learning strategies, employing collaborative learning, and student-faculty interaction between senior CISs and senior U.S. students would be smaller than that between first-year CISs and first-year U.S. students. According to the findings, the mean differences in utilizing effective learning strategies between first-year CISs and first-year U.S. students (.16) was smaller than the mean difference in Learning Strategies between senior CISs and senior U.S. students (.58), which did not support the hypothesis. The mean differences in Collaborative Learning between first-year CISs and first-year U.S. students (.24) was smaller than the mean differences in Collaborative Learning between senior CISs and senior U.S. students (.82), which was also opposite to the hypothesis. Nevertheless, the mean differences in Student-faculty Interaction between first-year CISs and first-year U.S. students (4.39) was larger than the mean differences in Student-faculty Interaction between senior CISs and senior U.S. students (2.98), which supported the hypothesis. Please see more details about the means and standard deviations of each engagement indicators in Table F2 in Appendix F.

2. What is the relationship between CIS learning strategies, collaborative learning, student-faculty interaction, and their overall institutional satisfaction?

Per the OLS regression results, among first-year CISs, Learning Strategies, Collaborative Learning, Student-faculty Interaction scales all had a significant and positive relationship with Overall Institutional Satisfaction, controlling for all other student characteristics. The coefficient of Learning Strategies ($B = .12$, $p < .001$) reflected that, for every one standard deviation increase in Learning Strategies among first-year CISs, the Overall Institutional Satisfaction of first-year CISs would increase .12 standard deviations, holding all other variables constant. The coefficient of Collaborative Learning ($B = .07$, $p < .05$) reflected that, for every one standard

deviation increases in Collaborative Learning among first-year CISs, the Overall Institutional Satisfaction of first-year CISs would increase .07 standard deviations, holding all other variables constant. The coefficient of Student-faculty Interaction (B = .12, p < .001) reflected that for every one standard deviation increases in Student-faculty Interaction among first-year CISs, the Overall Institutional Satisfaction of first-year CISs would increase .12 standard deviations, holding all other variables constant. A significant regression equation was found (F(23,937) = 5.213, p < .001) with an adjusted R^2 of .09, which means that 9% of the variance in first-year CIS Overall Institutional Satisfaction could be explained by this model. Such positive and significant relationship between Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction among first-year CISs did support Hypothesis Two, which stipulated that first-year CIS learning strategies, collaborative learning, and student-faculty interaction would have a positive relationship with their overall institutional satisfaction. Such a positive and strong relationship indicated that, if colleges and universities plan to promote first-year CIS Overall Institutional Satisfaction, they should make efforts in encouraging student engagement in Learning Strategies, Collaborative Learning, and Student-faculty Interaction.

Among senior CISs, Learning Strategies and Student-faculty Interaction scales had a significant and positive relationship with students' Overall Institutional Satisfaction, controlling for all other student characteristics. The coefficient of Learning Strategies (B = .19, p < .001) reflected that, for every one standard deviation increases in Learning Strategies among senior CISs, the Overall Institutional Satisfaction of senior CISs would increase .19 standard deviations, holding all other variables constant. The coefficient of Student-faculty Interaction (B = .13, p < .001) reflected that, for every one standard deviation increases in Student-faculty Interaction among senior CISs, the Overall Institutional Satisfaction of senior CISs would

increase .13 standard deviations, holding all other variables constant. A significant regression equation was found ($F(23,869) = 6.556$, $p < .001$) with an adjusted R^2 of .13, which means that 13% of the variance in senior CIS Overall Institutional Satisfaction could be explained by this model. Due to the insignificant relationship between collaborative learning and overall institutional satisfaction, this finding partially supported Hypothesis Two, which proposed that senior CIS learning strategies, collaborative learning, and student-faculty interaction would have a positive relationship with their overall institutional satisfaction. Such a positive and strong relationship indicated that, if colleges and universities plan to promote senior CIS Overall Institutional Satisfaction, they should make efforts in encouraging student engagement in Learning Strategies and Student-faculty Interaction. Please see more details about the regression models in Table 4.5.

Table 4.5

Regression Results of Learning Strategies, Collaborative Learning, Student-faculty Interaction and Overall Institutional Satisfaction among CISs

	Overall Institutional Satisfaction [a]					
	First-year CISs			Senior CISs		
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	-.25	.06	***	-.12	.05	*
Learning Strategies[a]	.12	.03	***	.19	.04	***
Collaborative Learning[a]	.07	.03	*	.02	.04	
Student-faculty Interaction[a]	.12	.03	***	.13	.03	***
Female	-.01	.05		.09	.06	
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	-.27	.14		.18	.19	
Physical Sciences, Mathematics, and Computer Science	-.17	.10		.01	.13	
Social Sciences	.07	.11		.11	.14	
Business	-.09	.09		.07	.11	
Communications, Media, and Public Relations	-.22	.14		.04	.16	
Education	.15	.19		.36	.31	
Engineering	.04	.11		.25	.13	
Health Professions	.04	.16		.19	.17	
Social Service Professions	-.49	.37		.53	.33	
Other	.18	.17		-.05	.17	
Undecided	-.15	.14		.05	.31	
Traditional age	-.09	.19		-.11	.07	
Full-time	-.04	.13		-.20	.11	
Taking courses all online	.05	.17		.43	.19	*
First generation students	.02	.05		.00	.06	
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.01	.06		-.11	.06	
Doctoral degree	.02	.07		.09	.09	
Grades (As = reference group)						
Mostly Bs	-.13	.05	*	-.13	.06	*
Cs or lower	-.34	.12	**	-.69	.15	***
R	.33			.39		
Adjusted R^2	.09			.13		
F	5.213***			6.556***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.
a. Continuous variables (Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction) were standardized prior to entry into the model.

3. How does the relationship between student utilization of learning strategies, collaborative learning, student-faculty interaction and overall institutional satisfaction vary between CISs and U.S. students?

To answer the third research question, an interaction term was added into the regression model to determine whether the effects of Learning Strategies, Collaborative Learning, Student-Faculty Interaction on Overall Institutional Satisfaction varied by student country of origin (China vs. the U.S.). First-year students and senior students were examined separately. Results showed that the interaction terms were non-significant among first-year students, meaning that a student's country of origin did not moderate the effect. In other words, the positive relationship between Learning Strategies, Collaborative Learning, Student-faculty Interaction and Overall Institutional Satisfaction did not statistically and significantly vary between first-year CISs and first-year U.S. students. Additionally, a significant regression equation was found ($F(27, 85373) = 330.893$, $p < .001$) with an adjusted R^2 of .09, which means that 9% of the variance in first-year students' Overall Institutional Satisfaction could be explained by this model. For the full model, the R^2 change is very close to 0. The $\Delta F(3,85373) = .79$, which was not statistically significant. The findings did not support the hypothesis. Hypothesis Three indicated that the relationship between first-year CIS Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction would be statistically different from the relationship of those four measures among U.S. students. However, the finding of this regression model showed that the relationship between first-year CIS Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction was not different from the relationship of those four measures among U.S. students. Please see Table 4.6 for more details about the regression model.

Among senior students, interaction terms were also non-significant, meaning that a student's country of origin did not moderate the effect. In other words, the positive relationship between Learning Strategies, Collaborative Learning, Student-Faculty Interaction and Overall Institutional Satisfaction did not vary significantly between senior CISs and senior U.S. students. A significant regression equation was found ($F(27,122678) = 513.453$, $p < .001$) with an adjusted R^2 of .10, which means that 10% of the variance in senior students' Overall Institutional Satisfaction could be explained by this model. For the full model, the R^2 change was very close to 0. The $\Delta F(3,122678) = .66$, which was not statistically significant. The findings did not support the hypothesis. Hypothesis Three indicated that the relationship between senior CIS Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction would be statistically different from the relationship of those four measures among U.S. students. However, the finding of this regression model showed that the relationship between senior CIS Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction was not different from the relationship of those four measures among U.S. students. Please see more details about the regression model in Table 4.7.

Table 4.6

Regression Results of Learning Strategies, Collaborative Learning, and Student-faculty Interaction, and Overall Institutional Satisfaction (First-year)

	Overall Institutional Satisfaction [a]					
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	.07	.00	***	.07	.00	***
Learning Strategies[a]	.14	.00	***	.14	.00	***
Collaborative Learning[a]	.07	.00	***	.07	.00	***
Student-faculty Interaction [a]	.10	.00	***	.10	.00	***
CISs	-.32	.03	***	-.33	.03	***
Female	.03	.01	***	.03	.01	***
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	-.09	.01	***	-.09	.01	***
Physical Sciences, Mathematics, and Computer Science	-.04	.02	*	-.04	.02	*
Social Sciences	-.06	.01	***	-.06	.01	***
Business	-.07	.01	***	-.07	.01	***
Communications, Media, and Public Relations	-.03	.02		-.03	.02	
Education	.07	.02	***	.07	.02	***
Engineering	.04	.02	**	.04	.02	**
Health Professions	-.06	.01	***	-.06	.01	***
Social Service Professions	-.04	.02	*	-.04	.02	*
Other	.06	.02	**	.06	.02	**
Undecided	-.19	.02	***	-.19	.02	***
Traditional age	-.17	.02	***	-.17	.02	***
Full-time	.05	.02	***	.05	.02	**
Taking courses all online	.17	.02	*	.17	.02	***
First generation students	-.06	.01	***	-.06	.01	***
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.02	.01	*	-.02	.01	*
Doctoral degree	-.03	.01	***	-.03	.01	***
Grades (As = reference group)						
Mostly Bs	-.18	.01	***	-.18	.01	***
Cs or lower	-.48	.01	***	-.48	.01	***
Interaction Term						
LS×CISs				-.04	.03	
CL×CISs				.00	.04	
SF×CISs				.04	.04	
R	.31			.31		
Adjusted R^2	.09			.09		
F	372.159***			330.893***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.

a. Continuous variables (Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction) were standardized prior to entry into the model.

Table 4.7

Regression Results of Learning Strategies, Collaborative Learning, and Student-faculty Interaction, and Overall Institutional Satisfaction (Senior)

	Overall Institutional Satisfaction [a]					
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	-.01	.00	***	-.01	.00	***
Learning Strategies[a]	.16	.00	***	.16	.00	***
Collaborative Learning[a]	.01	.00	*	.01	.00	*
Student-faculty Interaction [a]	.17	.00	***	.17	.00	***
CISs	-.23	.03	***	-.22	.03	***
Female	.04	.01	***	.04	.01	***
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	.01	.01		.01	.01	
Physical Sciences, Mathematics, and Computer Science	-.02	.02		-.02	.02	
Social Sciences	.09	.01	***	.09	.01	***
Business	.13	.01	***	.13	.01	***
Communications, Media, and Public Relations	.09	.02	***	.09	.02	***
Education	.08	.01	***	.08	.01	***
Engineering	.07	.01	***	.07	.01	***
Health Professions	.04	.01	***	.04	.01	***
Social Service Professions	.14	.01	***	.14	.01	***
Other	.09	.01	***	.09	.01	***
Undecided	-.20	.06	**	-.20	.06	**
Traditional age	.00	.01		.00	.01	
Full-time	.02	.01	*	.02	.01	*
Taking courses all online	.24	.01	***	.24	.01	***
First generation students	-.02	.01	**	-.02	.01	**
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.05	.01	***	-.05	.01	***
Doctoral degree	-.05	.01	***	-.05	.01	***
Grades (As = reference group)						
Mostly Bs	-.19	.01	***	-.19	.01	***
Cs or lower	-.50	.01	***	-.50	.01	***
Interaction Term						
LS×CISs				.04	.04	
CL×CISs				.01	.04	
SF×CISs				-.05	.04	
R	.32			.32		
Adjusted R^2	.10			.10		
F	577.557***			513.453***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.

a. Continuous variables (Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction) were standardized prior to entry into the model.

4. To what extent do first-year and senior CISs differ in their utilization of learning strategies, collaborative learning, student-faculty interaction, controlling for student demographic characteristics, educational aspiration, and grades? To what extent do first-year and senior CISs differ in overall institutional satisfaction, controlling for CIS learning strategies, collaborative learning, student-faculty interaction, and a set of student characteristics?

In the OLS model, with Learning Strategies as the dependent variable, the results showed that the utilization of effective Learning Strategies was not statistically significantly different between first-year CISs and senior CISs, controlling for other student characteristics. A significant regression equation was found ($F(21,1947) = 5.063$, $p < .001$) with an adjusted R^2 of .04, which means that 4% of the variance in the CIS utilization of effective Learning Strategies can be explained by this model. Because effective Learning Strategies was not significantly different between first-year and senior CISs, this finding did not support Hypothesis Four, which stated that first-year CIS engagement in effective learning strategies will be statistically significant lower than that of senior CISs. Please see Table 4.8 for more details of the model.

As shown in Table 4.9, first-year CISs and senior CISs did not statistically and significantly differ in Collaborative Learning, controlling for other student characteristics. A significant regression equation was found ($F(21, 1936) = 1.692$, $p < .05$) with an adjusted R^2 of .01, which means that 1% of the variance in CIS Collaborative Learning could be explained by this model. Because Collaborative Learning was not significantly different between first-year and senior CISs, this finding did not support Hypothesis Four that first-year CIS engagement in collaborative learning would be statistically significant lower than that of senior CISs.

Based on the OLS model with the Student-faculty Interaction as the dependent variable, the results showed that senior CISs had a higher Student-faculty Interaction than first-year CISs (B = .20, p <.001), controlling for other student characteristics. Specifically, the coefficient means that senior CIS scores in Student-faculty Interaction was .2 standard deviation higher than first-year CISs, holding all other variables constant. A significant regression equation was found (F(21, 1970) = 3.567, p < .001) with an adjusted R^2 of .03, which means that 3% of the variance in CIS interaction with faculty members could be explained by this model. Because senior CIS Student-faculty Interaction was significantly higher than that of first-year CISs, this finding supported Hypothesis Four which stated that first-year CIS engagement in student-faculty interaction would be statistically significant lower than that of senior CISs. Please see Table 4.10 for more details about the model.

As shown in Table 4.11, first-year CISs and senior CISs did not differ significantly in their Overall Institutional Satisfaction, controlling for other student characteristics. A significant regression equation was found (F(24, 1829) = 10.537, p < .001) with an adjusted R^2 of .11, which means that 11% of the variance in CIS Overall Institutional Satisfaction could be explained by this model. Because Overall Institutional Satisfaction was not significantly different between first-year and senior CISs, this finding did not support Hypothesis Four, which asserted that first-year CIS overall institutional satisfaction will be statistically significant lower than that of senior CISs.

Table. 4.8

Regression Results of Learning Strategies of CISs

Student Characteristics	Learning Strategies [a] B	SE of B	Sig.
(Constant)	.05	.04	
Senior	-.07	.04	
Female	.19	.04	***
Disciplinary Areas (Arts and Humanities = reference group)			
Biological Sciences, Agriculture, and Natural Resources	.15	.12	
Physical Sciences, Mathematics, and Computer Science	.13	.09	
Social Sciences	.13	.09	
Business	.18	.07	**
Communications, Media, and Public Relations	-.06	.11	
Education	-.05	.17	
Engineering	.09	.09	
Health Professions	.31	.12	*
Social Service Professions	.27	.25	
Other	.03	.13	
Undecided	-.09	.13	
Traditional age	-.10	.06	
Full-time	-.05	.09	
Taking courses all online	-.10	.14	
First generation students	-.15	.04	**
Educational Aspirations (Master's degree = reference group)			
Baccalaureate or less	.00	.04	
Doctoral degree	.10	.06	
Grades (As = reference group)			
Mostly Bs	-.19	.04	***
Cs or lower	-.39	.10	***
R	.23		
Adjusted R^2	.04		
F	5.063***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.

a. The continuous variable Learning Strategies was standardized prior to entry into the model.

Table. 4.9

Regression Results of Collaborative Learning of CISs

	Collaborative Learning [a]		
Student Characteristics	B	SE of B	Sig.
(Constant)	-.06	.04	
Senior	.05	.04	
Female	-.10	.04	*
Disciplinary Areas (Arts and Humanities = reference group)			
Biological Sciences, Agriculture, and Natural Resources	.02	.13	
Physical Sciences, Mathematics, and Computer Science	-.07	.09	
Social Sciences	-.03	.09	
Business	.07	.07	
Communications, Media, and Public Relations	-.07	.12	
Education	-.22	.18	
Engineering	.12	.09	
Health Professions	.04	.13	
Social Service Professions	-.03	.27	
Other	.01	.13	
Undecided	.02	.14	
Traditional age	.06	.07	
Full-time	-.12	.09	
Taking courses all online	-.21	.14	
First generation students	-.11	.04	*
Educational Aspirations (Master's degree = reference group)			
Baccalaureate or less	.05	.05	
Doctoral degree	-.03	.06	
Grades (As = reference group)			
Mostly Bs	-.05	.04	
Cs or lower	-.22	.10	*
R	.13		
Adjusted R^2	.01		
F	1.692*		

Notes. * $p<.05$, ** $p<.01$, ***$p<.001$, two-tailed.
a. The continuous variable Collaborative Learning was standardized prior to entry into the model.

Table. 4.10

Regression Results of Student-faculty Interaction of CISs

	Student-faculty Interaction[a]		
Student Characteristics	B	SE of B	Sig.
(Constant)	.05	.04	
Senior	.20	.04	***
Female	-.12	.04	**
Disciplinary Areas (Arts and Humanities = reference group)			
Biological Sciences, Agriculture, and Natural Resources	-.30	.13	*
Physical Sciences, Mathematics, and Computer Science	-.18	.09	
Social Sciences	.03	.10	
Business	-.12	.07	
Communications, Media, and Public Relations	-.05	.12	
Education	-.07	.18	
Engineering	-.08	.09	
Health Professions	-.07	.13	
Social Service Professions	-.54	.26	*
Other	-.13	.13	
Undecided	.01	.14	
Traditional age	.18	.07	**
Full-time	-.04	.09	
Taking courses all online	-.06	.14	
First generation students	-.06	.04	
Educational Aspirations (Master's degree = reference group)			
Baccalaureate or less	.17	.05	***
Doctoral degree	.19	.06	**
Grades (As = reference group)			
Mostly Bs	-.15	.04	***
Cs or lower	-.24	.10	*
R	.19		
Adjusted R^2	.03		
F	3.567***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.

a. The continuous variable Student-faculty Interaction was standardized prior to entry into the model.

Table 4.11

Regression Results of Overall Institutional Satisfaction of CISs

	Overall Institutional Satisfaction[a]		
Student Characteristics	B	SE of B	Sig.
(Constant)	-.21	.04	***
LS	.15	.02	***
CL	.05	.02	*
SF	.13	.02	***
Senior	.06	.04	
Female	.04	.04	
Disciplinary Areas (Arts and Humanities = reference group)			
Biological Sciences, Agriculture, and Natural Resources	-.06	.11	
Physical Sciences, Mathematics, and Computer Science	-.10	.08	
Social Sciences	.08	.09	
Business	-.03	.07	
Communications, Media, and Public Relations	-.10	.10	
Education	.23	.16	
Engineering	.13	.08	
Health Professions	.11	.11	
Social Service Professions	.10	.24	
Other	.00	.12	
Undecided	-.06	.13	
Traditional age	-.09	.06	
Full-time	-.15	.08	
Taking courses all online	.27	.12	*
First generation students	.01	.04	
Educational Aspirations (Master's degree = reference group)			
Baccalaureate or less	-.06	.04	
Doctoral degree	.04	.06	
Grades (As = reference group)			
Mostly Bs	-.13	.04	**
Cs or lower	-.50	.09	***
R	.35		
Adjusted R^2	.11		
F	10.537***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.
a. The continuous variables Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction was standardized prior to entry into the model.

5. Does a student's country of origin (China vs. the U.S.) moderate the impact of class standing (first-year vs. senior) on learning strategies, collaborative learning, student-faculty interaction, and overall institutional satisfaction?

To answer the fifth research question, an interaction term was entered into the OLS regression model to determine whether the effect of the student's country of origin moderated the effect of class standing on Learning Strategies, Collaborative Learning, Student-faculty Interaction and Overall Institutional Satisfaction respectively. The interaction term was non-significant, which means that the student's country of origin did not moderate the effect of class standing on Learning Strategies. In other words, the negative relationship between class standing and student utilization of effective Learning Strategies did not significantly vary between CISs and U.S. students. A significant regression equation was found ($F(23, 217345) = 593.433$, $p < .001$) with an adjusted R^2 of .06, which means that 6% of the variance in students' Learning Strategies could be explained by this model. For the full model, the R^2 change was very close to 0. The $\Delta F(1,217345) = .02$, which was not statistically significant. This finding did not support the hypothesis. Hypothesis Five indicated that a student's country of origin (China vs. the U.S.) would moderate the impact of class standing (first-year vs. senior) on effective Learning Strategies. However, the insignificant interaction term indicated that a student's country of origin did not moderate the impact of class standing on effective Learning Strategies. Please see more details in Table 4.12.

As shown in Table 4.13., the interaction term between the student country of origin and class standing was also non-significant. This result means that the student's country of origin did not moderate the impact of class standing on Collaborative Learning. In other words, the positive relationship between class standing and Collaborative Learning did not significantly vary

between CISs and U.S. students. A significant regression equation was found ($F(23, 216649) = 1262.543$, $p < .001$) with an adjusted R^2 of .12, which means that 12% of the variance in students' Collaborative Learning could be explained by this model. For the full model, the R^2 change was very close to 0. The $\Delta F(1, 216649) = 1.73$, which was not statistically significant. This finding did not support the hypothesis. Hypothesis Five indicated that a student's country of origin (China vs. the U.S.) would moderate the impact of class standing (first-year vs. senior) on Collaborative Learning. However, the insignificant interaction term indicated that a student's country of origin did not moderate the impact of class standing on Collaborative Learning.

The results from Table 4.14 showed that the interaction term (B = -.12) between the student country of origin and class standing was significant ($p < .01$). This result means that the student's country of origin did moderate the effect of student class standing on Student-faculty Interaction. In other words, the positive relationship between student class standing and Student-faculty Interaction did significantly vary between CISs and U.S. students. The slopes of the regression lines between Student-faculty Interaction and student class standings were different between CISs and U.S. students. The coefficient of the interaction term indicated how different those slopes were.

Specifically, the coefficient of the interaction term CISs × Senior was -.12, which means that the effect of being a senior CIS was .12 standard deviation lower than for U.S. students. In this model, the effect for senior U.S. students was .35, whereas the effect for senior CISs was .23. A significant regression equation was found ($F(23, 218092) = 944.531$, $p < .001$) with an adjusted R^2 of .09, which means that 9% of the variance in students' Student-faculty Interaction could be explained by this model. For the full model, the R^2 change was very close to 0. The $\Delta F(1, 218092) = 8.46$, which was statistically significant ($p < .01$). The significant

interaction term in the regression model supported Hypothesis Five, which asserted that a student's country of origin (China vs. the U.S.) would moderate the impact of class standing (first-year vs. senior) on Student-faculty Interaction.

The results from Table 4.15 showed that the interaction term (B = .13) between the student's country of origin and class standing was significant (p <.01). This result means that the student's country of origin did moderate the effect of the students' class standing on their Overall Institutional Satisfaction. In other words, the negative relationship between being a senior student and students' Overall Institutional Satisfaction did significantly vary between CISs and U.S. students. The slopes of the regression lines between Overall Institutional Satisfaction and student class standings were different between CISs and U.S. students.

The coefficient of the interaction term CISs × Senior was .13, which means that the effect of being a senior CIS was .13 standard deviation higher than for U.S. students. In this model, the effect for senior U.S. students was -.06, whereas the effect for senior CISs was .07. A significant regression equation was found (F(26, 208080) = 849.399, p < .001) with an adjusted R^2 of .10, which means that 10% of the variance in students' Overall Institutional Satisfaction could be explained by this model. For the full model, the R^2 change was very close to 0. The ΔF(1, 208080) = 8.78, which was statistically significant (p <.01). The significant interaction term in the model supported Hypothesis Five, which stated that a student's country of origin (China vs. the U.S.) would moderate the impact of class standing (first-year vs. senior) on Overall Institutional Satisfaction.

Table 4.12

Regression Results of Student Characteristics and Learning Strategies

	Learning Strategies [a]					
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	.01	.00	**	.01	.00	**
Senior	-.11	.00	***	-.11	.00	***
CISs	.08	.02	***	.08	.02	***
Female	.16	.00	***	.16	.00	***
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	.05	.01	***	.05	.01	***
Physical Sciences, Mathematics, and Computer Science	-.11	.01	***	-.11	.01	***
Social Sciences	.03	.01	**	.03	.01	**
Business	.01	.01		.01	.01	
Communications, Media, and Public Relations	-.02	.01		-.02	.01	
Education	.04	.01	***	.04	.01	***
Engineering	-.15	.01	***	-.15	.01	***
Health Professions	.13	.01	***	.13	.01	***
Social Service Professions	.04	.01	***	.04	.01	***
Other	-.03	.01	**	-.03	.01	**
Undecided	-.13	.02	***	-.13	.02	***
Traditional age	-.31	.01	***	-.31	.01	***
Full-time	-.02	.01	**	-.02	.01	**
Taking courses all online	.11	.01	***	.11	.01	***
First generation students	.06	.00	***	.06	.00	***
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.15	.00	***	-.15	.00	***
Doctoral degree	.13	.01	***	.13	.01	***
Grades (As = reference group)						
Mostly Bs	-.12	.00	***	-.12	.00	***
Cs or lower	-.33	.01	***	-.33	.01	***
Interaction Term						
CISs × Senior				-.01	.04	
R	.24			.24		
Adjusted R^2	.06			.06		
F	620.409***			593.433***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.
a. The continuous variable Learning Strategies was standardized prior to entry into the model.

Table 4.13

Regression Results of Student Characteristics and Collaborative Learning

	Collaborative Learning [a]					
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	.00	.00		.00	.00	
Senior	.16	.00	***	.16	.00	***
CISs	-.06	.02	**	-.06	.02	**
Female	.03	.00	***	.03	.00	***
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	.32	.01	***	.32	.01	***
Physical Sciences, Mathematics, and Computer Science	.26	.01	***	.26	.01	***
Social Sciences	.04	.01	***	.04	.01	***
Business	.30	.01	***	.30	.01	***
Communications, Media, and Public Relations	.19	.01	***	.19	.01	***
Education	.31	.01	***	.31	.01	***
Engineering	.60	.01	***	.60	.01	***
Health Professions	.39	.01	***	.39	.01	***
Social Service Professions	.12	.01	***	.12	.01	***
Other	.17	.01	***	.17	.01	***
Undecided	.05	.02	**	.05	.02	**
Traditional age	.26	.01	***	.26	.01	***
Full-time	.27	.01	***	.27	.01	***
Taking courses all online	-.72	.01	***	-.72	.01	***
First generation students	-.04	.00	***	-.04	.00	***
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.10	.00	***	-.10	.00	***
Doctoral degree	.05	.01	***	.05	.01	***
Grades (As = reference group)						
Mostly Bs	.03	.00	***	.03	.00	***
Cs or lower	-.14	.01	***	-.14	.01	***
Interaction Term						
CISs × Senior				-.06	.04	
R		.34		.34		
Adjusted R^2		.12		.12		
F	1319.848***			1262.543***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.
a. The continuous variable Collaborative Learning was standardized prior to entry into the model.

Table 4.14

Regression Results of Student Characteristics and Student-faculty Interaction

	Collaborative Learning [a]					
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	-.04	.00	***	-.04	.00	***
Senior	.35	.00	***	.35	.00	***
CISs	.21	.02	***	.21	.02	***
Female	-.04	.00	***	-.04	.00	***
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	-.15	.01	***	-.15	.01	***
Physical Sciences, Mathematics, and Computer Science	-.17	.01	***	-.17	.01	***
Social Sciences	-.16	.01	***	-.16	.01	***
Business	-.15	.01	***	-.15	.01	***
Communications, Media, and Public Relations	.03	.01	*	.03	.01	*
Education	.06	.01	***	.06	.01	***
Engineering	-.25	.01	***	-.25	.01	***
Health Professions	-.10	.01	***	-.09	.01	***
Social Service Professions	-.05	.01	***	-.05	.01	***
Other	-.09	.01	***	-.09	.01	***
Undecided	-.22	.02	***	-.22	.02	***
Traditional age	.29	.01	***	.29	.01	***
Full-time	.22	.01	***	.22	.01	***
Taking courses all online	-.44	.01	***	-.44	.01	***
First generation students	.04	.00	***	.04	.00	***
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.13	.00	***	-.13	.00	***
Doctoral degree	.21	.01	***	.21	.01	***
Grades (As = reference group)						
Mostly Bs	-.06	.00	***	-.06	.00	***
Cs or lower	-.15	.01	***	-.15	.01	***
Interaction Term						
CISs × Senior				-.12	.04	**
R	.30			.30		
Adjusted R^2	.09			.09		
F	987.046***			944.531***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.
a. The continuous variable Student-faculty Interaction was standardized prior to entry into the model.

Table 4.15

Regression Results of Student Characteristics and Overall Institutional Satisfaction

	Overall Institutional Satisfaction [a]					
Student Characteristics	B	SE of B	Sig.	B	SE of B	Sig.
(Constant)	.02	.00	***	.02	.00	***
LS	.15	.00	***	.15	.00	***
CL	.03	.00	***	.03	.00	***
SF	.14	.00	***	.14	.00	***
Senior	-.06	.00	***	-.06	.00	***
CISs	-.28	.02	***	-.28	.02	***
Female	.04	.00	***	.04	.00	***
Disciplinary Areas (Arts and Humanities = reference group)						
Biological Sciences, Agriculture, and Natural Resources	-.03	.01	**	-.03	.01	**
Physical Sciences, Mathematics, and Computer Science	-.02	.01	*	-.02	.01	*
Social Sciences	.03	.01	**	.03	.01	**
Business	.05	.01	***	.05	.01	***
Communications, Media, and Public Relations	.04	.01	***	.04	.01	***
Education	.08	.01	***	.08	.01	***
Engineering	.06	.01	***	.06	.01	***
Health Professions	.00	.01		.00	.01	
Social Service Professions	.06	.01	***	.06	.01	***
Other	.07	.01	***	.07	.01	***
Undecided	-.14	.02	***	-.14	.02	***
Traditional age	-.02	.01	***	-.02	.01	***
Full-time	.02	.01	**	.02	.01	**
Taking courses all online	.24	.01	***	.24	.01	***
First generation students	-.03	.00	***	-.03	.00	***
Educational Aspirations (Master's degree = reference group)						
Baccalaureate or less	-.04	.00	***	-.04	.00	***
Doctoral degree	-.04	.01	***	.04	.01	***
Grades (As = reference group)						
Mostly Bs	-.19	.00	***	-.19	.00	***
Cs or lower	-.50	.01	***	-.50	.01	***
Interaction Term						
CISs × Senior				.13	.04	**
R	.31			.31		
Adjusted R^2	.10			.10		
F	882.990***			849.399***		

Notes. *p<.05, **p<.01, ***p<.001, two-tailed.

a. The continuous variables Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction was standardized prior to entry into the model.

Summary of Findings

Among first-year students, CIS Learning Strategies, Collaborative Learning, and Student-faculty Interaction had a positive and significant relationship with their Overall Institutional Satisfaction. The relationship between Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction did not vary significantly between first-year CISs and first-year U.S. students. Among senior students, CIS Learning Strategies and Student-faculty Interaction had a positive and significant relationship with their Overall Institutional Satisfaction. The relationship between Learning Strategies, Collaborative Learning, Student-faculty Interaction and Overall Institutional Satisfaction did not vary significantly between senior CISs and senior U.S. students. For both first-year and senior students, CIS engagement in Collaborative Learning was not significantly different from their U.S. peers. CISs had higher scores in Learning Strategies and Student-faculty Interaction than did their U.S. peers.

When comparing the Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction between first-year CISs and senior CISs, I found that first-year CISs and senior CISs did not differ in Learning Strategies, Collaborative Learning, and Overall Institutional Satisfaction significantly. However, senior CISs had significantly higher Student-faculty Interaction scores than first-year CISs. Finally, the student country of origin (China vs. the U.S.) did not moderate the effect of the students' class standing on Learning Strategies and Collaborative Learning. However, the student's country of origin did moderate the effect of students' class standing on their Student-faculty Interaction and Overall Institutional Satisfaction.

Chapter Five: Discussion and Implications

This chapter begins with discussing the comparison between the findings and the hypotheses. Then, the applicability of Hofstede's Dimension of Culture (2001) in student engagement between CISs and U.S. students will be discussed. Finally, implications for future studies and practices will be presented.

Discussion of Findings

Table 5.1 contains the comparison between the hypotheses and findings for each research question. The differences between the hypotheses and findings mainly came from the variation of Learning Strategies, Collaborative Learning, and Student-faculty Interaction between CISs and U.S. students, and the variation of student-faculty interaction between first-year CISs and senior CISs. The following paragraphs focus on discussing the variations in these three engagement indicators.

Table 5.1

Comparison between Hypotheses and Findings

No.		Hypotheses	Findings	
1	LS[a]	First-year: CISs ≈ U.S. students	First-year: CISs > U.S. students	×
		Senior: CISs ≈ U.S. students	Senior: CISs > U.S. students	×
		$\lvert M_{\text{first-year CISs}} - M_{\text{first-year U.S.}} \rvert > \lvert M_{\text{senior CISs}} - M_{\text{senior U.S.}} \rvert$	$\lvert M_{\text{first-year CISs}} - M_{\text{first-year U.S.}} \rvert < \lvert M_{\text{senior CISs}} - M_{\text{senior U.S.}} \rvert$	×
	CL[a]	First-year: CISs > U.S. students	First-year: CISs ≈ U.S. students	×
		Senior: CISs > U.S. students	Senior: CISs ≈ U.S. students	×
		$\lvert M_{\text{first-year CISs}} - M_{\text{first-year U.S.}} \rvert > \lvert M_{\text{senior CISs}} - M_{\text{senior U.S.}} \rvert$	$\lvert M_{\text{first-year CISs}} - M_{\text{first-year U.S.}} \rvert < \lvert M_{\text{senior CISs}} - M_{\text{senior U.S.}} \rvert$	×
	SF[a]	First-year: CISs <U.S. students	First-year: CISs > U.S. students	×
		Senior: CIS < U.S. students	Senior: CIS > U.S. students	×
		$\lvert M_{\text{first-year CISs}} - M_{\text{first-year U.S.}} \rvert > \lvert M_{\text{senior CISs}} - M_{\text{senior U.S.}} \rvert$	$\lvert M_{\text{first-year CISs}} - M_{\text{first-year U.S.}} \rvert > \lvert M_{\text{senior CISs}} - M_{\text{senior U.S.}} \rvert$	✓
2	First-year	LS, CL, and SF will all have a positive and strong relationship with Overall Institutional Satisfaction	LS, CL, and SF all had a positive and strong relationship with Overall Institutional Satisfaction	✓
	Senior	LS, CL, and SF all have a positive and strong relationship with Overall Institutional Satisfaction	LS, CL, and SF had a positive and strong relationship with Overall Institutional Satisfaction	Δ
3	First-year	The relationship between CISs' LS, CL, SF, and overall institutional satisfaction will be statistically different from the relationship of those four measures among U.S. students.	The relationship between CISs' LS, CL, SF, and overall institutional satisfaction was not statistically different from the relationship of those four measures among U.S. students.	×
	Senior	The relationship between CISs' LS, CL, SF, and overall institutional satisfaction will be statistically different from the relationship of those four measures among U.S. students.	The relationship between CISs' LS, CL, SF, and overall institutional satisfaction was not statistically different from the relationship of those four measures among U.S. students.	×
4	LS[a]	First-year < Senior	First-year ≈ Senior	×
	CL[a]	First-year < Senior	First-year ≈ Senior	×
	SF[a]	First-year < Senior	First-year < Senior	✓
	Overall Institutional Satisfaction	First-year < Senior	First-year ≈ Senior	×
5	LS[a]	The interaction term CIS × Senior will be statistical significant	The interaction term CIS × Senior was not statistical significant	×
	CL[a]	The interaction term CIS × Senior will be statistical significant	The interaction term CIS × Senior was not statistical significant	×
	SF[a]	The interaction term CIS × Senior will be statistical significant	The interaction term CIS × Senior was statistical significant	✓
	Overall Institutional Satisfaction	The interaction term CIS × Senior will be statistical significant	The interaction term CIS × Senior was statistical significant	✓

Notes: "✓": Findings supported the hypothesis; "×": Findings did not support the hypothesis "Δ": Findings partially supported the hypothesis.

a. LS: Learning Strategies, CL: Collaborative Learning, SF: Student-faculty Interaction.

Learning strategies. CISs' higher scores in employment effective Learning Strategies among both first-year and senior students were very likely because that effective learning strategies were strongly emphasized by teachers during their secondary education in China. Although CISs had higher scores in employing effective Learning Strategies than did their U.S. peers, and prior studies indicated that CISs were hard workers (e.g., Valdez, 2015), I believe that there is still space for CISs to become more effective and efficient learners. Based on a personal conversation with a faculty member in the school of business at a public university in the U.S., I learned that that faculty member had emphasized many times to his CISs that there was no need to read the entire textbook to prepare for exams. He emphasized that just reviewing class handouts and PowerPoint slides to digest the key knowledge of the course would be sufficient. However, he reflected that his CISs felt insecure when they did not read the entire textbook and they worried that they might miss something important from the textbook when they prepared for exams (personal communication, January 22, 2016). Those Chinese students were hard working and diligent, but their learning experiences could become more relaxed and efficient if they had followed that faculty member's suggestion and trained themselves to become efficient readers.

Collaborative learning. Among both first-year and senior students, CIS Collaborative Learning was not statistically different from that of U.S. students. However, the pattern of its individual items varied from the overall pattern. Among both first-year and senior students, CISs had lower mean scores for the item "explained course material to one or more students" than their U.S. counterparts. Maybe due to their language barriers or lack of confidence, CISs had a lower level of engagement in explaining course material to others than did their U.S. peers.

Student-faculty interaction. The findings for Student-faculty Interaction indicated that CISs had higher interaction with faculty members among both first-year and senior students,

which may not fit with faculty members' assumptions. This finding of the study can help faculty members better understand CIS experiences in the U.S. Additionally, when the mean scores of Learning Strategies, Collaborative Learning, and Student-faculty Interaction were compared to each other, I found that Student-faculty Interaction had the lowest mean scores among these three engagement indicators (please see more details in Table F2 in Appendix F), which indicated that there may be room to improve Student-faculty Interaction for all students, especially U.S. students.

More investigation is needed to understand U.S. student discussions about their career plans with faculty members. I found that the proportions of both first-year (50.0%) and senior U.S. students (43.3%) who answered "Never" to the item "talked about career plans with a faculty member" were both nearly twice as high as the proportions of CISs who answered "Never" to that item (First-year CISs: 25.3%; Senior CISs: 19.4%). It is important to understand why a large amount of U.S. students never talked about career plan with faculty members, as well as to whom those U.S. students usually spoke with about their career plan instead; additionally, it would be beneficial to understand the extent to which faculty members are engaged in advising students in career development.

I believe that frequent and quality communications with faculty members regarding courses and learning experiences should be encouraged among all students. Kuh (2003) argued that the quantity of interactions between student and faculty members does not necessarily equal better or higher quality interactions. Therefore, colleges and universities should not only encourage more frequent interaction between students and faculty members, but should also emphasize the quality of such student-faculty interaction.

Theoretical Implications of Hofstede's Dimensions of Culture

This study used three out of five dimensions in Hofstede's (2001) Dimensions of Culture as its conceptual grounding: individualism versus collectivism, power distance, and uncertainty avoidance. Overall, these three dimensions partially helped explain my findings; however, more theories or conceptual groundings are needed to explain the variation in student engagement between CISs and U.S. students. In the following paragraphs, I will discuss whether and how Hofstede's Dimensions of Culture will explain the variations in student engagement in Learning Strategies, Collaborative Learning, and Student-faculty Interaction between CISs and U.S. students.

Given the finding that, among both first-year and senior students, CIS Collaborative Learning was not statistically different from that of U.S. students. This finding did not support the hypothesis that CISs would have higher scores in Collaborative Learning than their U.S. students do. Hofstede's (2001) "individualism versus collectivism" dimension was not able to explain the pattern of Collaborative Learning of CISs and U.S. students.

The "uncertainty avoidance" dimension was able to explain the finding that both first-year and senior students had higher scores in effective Learning Strategies than did their U.S. peers. As discussed in Chapter Two, Asian culture has stronger uncertainty avoidance. Conversely, people may proactively approach those things with which they are familiar. Although the finding about effective Learning Strategies did not support the hypothesis, it indicated that CISs may not avoid or even proactively employ effective learning strategies that they are familiar with when studying in the U.S, because effective learning strategies are often emphasized by teachers in class in China. However, "uncertainty avoidance" was not able to explain CIS Collaborative Learning. Because I was not able to know who CISs collaborated with

based on the survey data, "uncertainty avoidance" cannot be used here to explain if CISs studied more with peers from the same linguistic and cultural background in order to "avoid the uncertainty" of collaborating with their U.S. peers.

Additionally, "power distance" is not able to fully explain why CISs had a higher level of interaction with faculty members than did their U.S. peers. In Zhang's (2013) qualitative study which explored the power distance in CIS online learning in the U.S., she claimed that Chinese learners viewed their instructors as "authorities, major sources of knowledge, and possessing high power" in hierarchically-structured classes (p. 250). Consequently, CISs tended to demonstrate greater respect for their teachers and be more reserved when interacting with faculty members. However, in this study, the higher Student-faculty Interaction of CISs suggests that the "power distance" between students and faculty member was not as present as I initially expected. Additionally, that senior CISs had a higher level of Student-faculty Interaction than first-year CISs suggests that the "power distance" and "uncertainty avoidance" decreased among senior CISs as they have been involved in the U.S. colleges and universities for a longer length of time. As senior CISs knew better about classroom norms and got familiar with faculty members' preferences in student-faculty interaction, this distance between senior CISs and faculty members may be shortened, and senior CIS uncertainty about the student-faculty interaction may be reduced.

Implications for Research

First, I will need a new or improved theory of culture that integrates into its tenets cultural impact and cultural changes. I have not found a published instrument that is specifically designed to measure cultural differences in college teaching, student learning, and engagement between China and the U.S. Additionally, there are no published instruments that can be

employed to assess the impact of culture on student engagement and learning, nor that measures how that impact of culture may change throughout a student's undergraduate collegiate experiences. With such a theory, I could build an instrument that measures the impact of culture on student learning and engagement, that measures faculty members' teaching in the U.S. context, and captures the dynamic cultural changes that take place in individuals and in internationalized higher education contexts.

Second, in my future research, I will further explore the variations of effective Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction between CISs and three other highly represented international college student groups in the U.S.: Indians, Saudi Arabians, and South Koreans. This future research will allow me to examine the variation of student engagement among international subgroups. I will also be able to use the cultural inventory I developed to examine the impact of culture on international student learning and engagement in the U.S. among international subgroups.

Although this study specifically examined the engagement of CISs, different types of CISs exist and the engagement of CISs may vary among different CIS subgroups. The engagement may be different among CISs from different regions in China, CISs whose families have different socioeconomic statuses, or CISs who are first-generation students, and so on. Exploring the variations within CIS experiences will be an interesting future study about their engagement in U.S. colleges and universities.

Third, the 2015 NSSE data does not allow me to track the changes of student engagement throughout their collegiate experiences until the year of 2018. By 2018, I will be able to obtain a longitudinal dataset so as to explore changes in CISs' engagement, although the sample size may be small. I believe time is an important factor and a resource that is closely associated with

student engagement. With a longitudinal study that includes the same group of CISs and U.S. students over a four-year period, I will be able to examine the role of time in influencing individual student's changes in their engagement, and explore the extent to which time influences the differences in engagement between CISs and U.S. students. Additionally, I will also be able to examine the changes of students' Overall Institutional Satisfaction over time.

Fourth, because the 2015 NSSE data does not include further detailed information in the Learning Strategies, Collaborative Learning, Student-faculty Interaction, and Overall Institutional Satisfaction items that allow researchers to obtain an in-depth understanding about students' engagement and learning, I will add a qualitative approach that based on my dissertation, in my post-doctoral research projects. I plan to conduct a multi-phase ethnographic study that tracks the changes in CIS and U.S. student learning preferences and engagement in Learning Strategies, Collaborative Learning, and Student-faculty Interaction in the U.S. throughout their collegiate experiences. For example, I will be able to have an in-depth understanding about the quality of Student-faculty Interaction and how the quality of interaction with faculty members may differ between CISs and U.S. students and may change overtime. Such a qualitative approach will complement my quantitative longitudinal study of student engagement in the third point as described above.

In addition, I would like to further explore the engagement patterns of students who answered "Never" to most of the learning strategies, collaborative learning, and student-faculty interaction items and those who had very low scores concerning their Overall Institutional Satisfaction. Their comments and feedback will help faculty members, staff, and institutions to examine and enhance the services and support provided to students. Creswell (2008) argued that the one-on-one interview is an ideal method for participants to express and share their thoughts

comfortably. Therefore, I will conduct semi-structured one-on-one interviews and observations with the participants' consent.

Fifth, this study also sets up future studies concerning the engagement of students from different cultural backgrounds. As discussed in Chapter Two, Zhao, Kuh, and Carini (2005) used students' race and ethnicity as a proxy for country of origin. This study used students' self-reported country of origin as an indicator of students' cultural differences. Languages can be used to distinguish students from different cultural backgrounds. Building on this study, future studies could ask students to self-report their first language or report the language they are most comfortable speaking, and combine an individual student's first language with their race and country of origin to serve as an indicator of their culture. Wardhaugh (2002) argued that cultural values determine the use of language, and claimed that "the culture of a people finds reflection in the language they employ: because they value certain things and do them in a certain way, they come to use their language in ways that reflect what they value and what they do" (p. 219). Adding a student's first language as one of the cultural indicators would allow researchers to capture how student engagement may vary among different student characteristic profiles and demographics.

Implications for Practice

This study will not only add a helpful piece to the current literature regarding international students' engagement in the U.S. at four-year institutions, but it also has practical value for college teaching, student services, and the internationalization of higher education. The following paragraphs will present the implications of this study for students, faculty members, student affairs professionals, and internationalization.

Establishing mutual understanding between CISs and U.S. students. In this study, I

paralleled student engagement in learning strategies, collaborative learning, and student-faculty interaction, as well as overall institutional satisfaction between CISs and U.S. students; this information will help CISs and U.S. students to establish mutual understanding about each other's engagement. Information on student engagement in learning strategies, collaborative learning, and student-faculty interaction, and overall institutional satisfaction can be disseminated during new student orientations. The findings of this study can be included in the flyers or brochures made available by student offices on campus, such as learning centers, tutoring centers, or international student offices. This type of mutual understanding can help both CISs and U.S. students respect the learning preferences and cultures of each other, and then adjust their individual approaches and behaviors in group work.

Engaging international students in an inclusive course environment. Faculty members can utilize the findings of this study to understand student engagement in learning strategies, collaborative learning, and student-faculty interaction, especially CIS engagement; it can then lead to the establishment and creation of effective practices to support CIS engagement cross-culturally as well as provide the sufficient resources they need. In practice, new faculty orientations, faculty learning communities, faculty reading groups, and teaching workshops are all great opportunities to bring faculty members together to exchange ideas and concerns about engaging not only CISs but all international students. Those faculty development activities can also help them understand the significance of engaging international students in courses and learn about strategies for creating engaging and inclusive classroom environments for all students. Some effective strategies that faculty members can apply to create inclusive classroom environments are role playing, small group activities, and team projects.

Group work is another crucial factor in student learning. The positive relationship between Collaborative Learning and Overall Institutional Satisfaction among senior CISs was not significant, but that does not mean collaborative learning is not important for senior CISs nor that it should be emphasized less. Faculty members may re-examine the strategies they employ to encourage students to learn collaboratively.

Based on my personal experiences as a Chinese graduate student studying in the U.S., I often felt challenged in jumping in during a group conversation, especially during free discussions in class when my U.S. peers became very excited about the topic; this was my experience even though I was very confident about my English ability and was ready to contribute my perspectives to the class. Many times, I highly concentrated on every single word from my peers and tried to find an opportunity to "squeeze into" the discussions. If I had found one second between speakers in each conversation, I would be able to jump in and start expressing my ideas. Nevertheless, I often failed to join the "battle" in class. When I reflected on my strategies for joining face-to-face discussions, I believe that my Chinese culture played an important role in influencing my behaviors—it is polite to wait for others to finish talking and then start my own speech. In a qualitative study that interviewed 12 undergraduate Chinese learners about their online-learning experiences in the U.S., Zhang (2013) claimed the same Confucian-heritage cultural norm which asked others to finish talking before one could speak. One of the interviewees in Zhang's (2013) study expressed the same dilemma of being polite to peers and being left out of class discussions in a face-to-face class setting. In addition to training myself to get used to the fast-paced discussions in class, I appreciate that I had understanding and supportive faculty members who cared about my learning experiences, understood my challenges, and suggested to the class in general to make sure that everyone on a team got an

equal opportunity to participate. I recommend that faculty members explicitly explain and make the entire class understand that everyone's opinions and contributions are valued in collaborative learning. Faculty members could also proactively reach out to students who are quiet in class or group work and inquire about their questions and concerns after class. At least for myself, I was strongly motivated when I knew my professors cared about my learning and valued my perspectives.

Encouragement may not be enough for more engagement. Instructors may consider requiring some amount of collaboration amongst students. I recommend that faculty members consider using instructor-assigned teams instead of students' self-selected groups to avoid several disadvantages of student self-selected groups. With student self-selected groups, students with strong abilities or pre-existing friendships are more likely to team up together; under-represented minorities, such as female students in Science Technology Engineering and Mathematics (STEM) fields, will be potentially isolated (Deibel, 2005). In student self-selected groups, international students may also be more likely to choose to work with other international students. I additionally recommend that faculty members use peer evaluations in collaborative learning activities to encourage the team to hold each other accountable.

Remediating language deficiencies through pre-course language trainings. Although language barriers might not have influenced all the lower engagement scores of CISs than U.S. students, they can be an important factor that may undermine international students' engagement and academic performance. There has been a lot of debate among scholars and practitioners regarding the follow questions: Should faculty members treat international students differently in courses for the purpose of supporting them in learning while not putting them on the spot? How do faculty members keep a balance between being fair to all students and accommodating

international students in learning, such as allowing international students to use dictionaries in closed-book exams? Do faculty members have responsibilities in helping international students with language remediation? If faculty members are willing to help international students with remediation, will their teaching schedules allow them to do so?

Based on the assessment of international students' language proficiency, many colleges and universities require international students to attend intensive English programs before they enroll in courses or at the beginning of their academic study. However, the curriculum at many intensive English programs focuses on grammar, daily conversations, and writing in general. Some international students have been studying in intensive English programs for years but still feel a large disconnect between what they've learned in intensive English programs and the necessary language skills to navigate college-level classes (personal communication, May 20, 2015). Therefore, pre-course language trainings that focus on major concepts and terminologies in students' disciplinary areas and academic writing may be more practical for international students (Li, Chen, & Duanmu, 2010).

Supporting international students in career development collaboratively. For many faculty members, advising international students about job searches either in the U.S. or in their home countries can be very challenging. Taking advising CISs as an example, when advising CISs who want to pursue their careers back in China after graduation, faculty members may not know the job market very well or the norms of professionalism in China. When talking to CISs who want to pursue a career in the U.S. after graduation, faculty members may also not well acknowledge immigration policies, complicated requirements for Optional Practical Training for international students, or the H-1B working visa petition for international employers in the U.S. Most of the time, students have to run between different offices on campus, such as the

international student office and career services office, to teach themselves about relevant information and requirements.

I recommend that student affairs and academic affairs collaborate in supporting students, faculty members and professionals from different functional offices, so that they can serve as resources for each other when supporting international and all students in their academic and co-curricular lives. However, in many cases, larger-size institutions often have a feature of loose coupling in their organizational structure (Birnbaum, 1988). A loosely coupled organization means that, although several entities are connected to each other under the big umbrella of an organization, entities within the organization may not have opportunities to interact with all other entities in the organization, so they may also not know well about the business of other entities that are in the same system but connected indirectly (Birnbaum, 1988). The loose coupling feature substantially undermines the communication and collaboration between student affairs and academic affairs departments and personnel, such as faculty members, academic advisors, career services, and international student offices, in supporting international students (Birnbaum, 1988). When international students encounter questions about immigration, job applications, and course registrations, they not only need to "connect the dots" between different offices by themselves, but they often can become overwhelmed if they receive inconsistent or mixed messages. The loosely coupled systems can not only gave rise to international students' frustration when they seek support, but can also create obstacles for administrators in promoting working efficiency.

More and more colleges and universities have aggregated resources on and off campus to support international students in their job searches. For example, Indiana University-Bloomington (IUB)'s Kelley School of Business (Kelley) has done an excellent job in bringing

different parties together to support international students' job applications through its initiative "Immigration Bridge Program" (IBP). IBP integrates resources within and beyond Kelley and IUB for the purpose of assisting both international students and recruiters concerning questions about immigration matters and employer sponsorship (IUB Kelley, n.d.). Facing the demands from international students, IBP has established a proactive partnership between the Undergraduate Career Services Office of Kelley, the IU Office of International Services, and a top immigration law firm to work collaboratively. For example, the Undergraduate Career Services Office of Kelley invited representatives from one of the top law firms, such as Fragomen, Del Rey, Bernsen & Loewy LLP, to facilitate a workshop for international students, sharing information about H-1B working visa regulation, strategies for navigating the H-1B process with potential employers, and alternative ways to gain working experiences beyond those that require the H-1B working visa. In addition to IUB, the University of Illinois Urbana-Champaign held a job fair exclusively for international students (Fischer, 2017).

Some other schools actively provide resources and support to employers that hire international students. For example, the University of California, Berkeley (UC Berkeley) created a manual for employers about hiring international students at UC Berkeley for full-time positions and internship (UC Berkeley, n.d.). That manual not only provided the work authorization options for international students who hold an F-1 student visa or J-1 exchange visitor visa, but also indicated how the Career Center and International Office of Berkeley could support potential employers in recruiting international students at Berkeley (UC Berkeley, n.d.). I would also recommend that colleges and universities in the U.S. establish connections or partnerships with entities, such as schools, enterprises, and organizations, in the home countries of their international students. In these cases, for international students who want to start their

careers in their home countries, colleges and universities in the U.S. could support international students in networking and professional development with clearer goals and more available resources. Colleges and universities could also connect their international students with alumni around the world, which could help international students obtain more information about the job markets in different countries. The above programs and initiatives are commendable initiatives that could be replicated to enhance the collaboration among different entities that work with international students on many other campuses in the U.S. Faculty members and staff should be proactive in their efforts to work across the boundaries in the organizational structures of colleges and universities, and collaborate with peer colleagues who are working with international students in a wider range of areas, even overseas, to influence changes.

Valuing student-faculty interaction in faculty promotion and award. Institutions and departments should value faculty members' contributions to engaging and interacting with international students, and should consider faculty members' contributions, such as student-faculty interaction, as an important criterion in promotion and awards (Wang, BrckaLorenz, & Chiang, 2015). By doing so, faculty members may believe that their efforts in helping students are valued, and faculty members may be more strongly motivated to support students. Additionally, institutions and departments may also initiate programs that bring faculty members and student affairs professionals together to support international students. For example, several institutions have living-learning communities with global or international themes, such as the Global Village Living-Learning Center at Indiana University Bloomington (Indiana University, n.d.-b) and the Global Village in the International Living Learning Center at Oregon State University (Oregon State University, n.d.). With supportive faculty members and staff, those living learning communities provide a friendly platform for international and domestic students

who have strong interests in cultural exchange and global experiences.

Promoting higher education internationalization. Having many international students on campus is an important sign of internationalization that is valued by many colleges and universities (Knight, 2011; de Wit, 2011). Yet, some colleges and universities have just added international students as marginalized and isolated groups on campus (de Wit, 2011). I believe that the quality of international student engagement, development, and academic success are closely relevant to the substantial internationalization of U.S. colleges and universities.

The findings and implications of this study will add an important piece to the literature and practice of internationalization of higher education. The implications of this study will not only contribute to the teaching and services provided to international students, but also can be transferrable to study international students' engagement in countries with educational contexts that are similar to the U.S. Countries or regions that face similar questions about enrolling a growing number of international students and supporting international students' engagement may also find helpful information and implications from this study. Although there might be cultural differences among those countries and regions, this study may create fundamental conversations among scholars and practitioners for supporting international students in different countries and regions through professional conferences, international seminars, or online meetings. I hope this study may also facilitate cross-national collaborations between colleges, universities, agencies, governments and other entities in helping international students' successes in higher education. Future studies could bring more perspectives and voices from around the world to make this research become global studies which could contribute to the globalization of higher education.

Conclusion

CISs and the entire international student body are an important component of the student

population in U.S. higher education institutions. Their contributions to the internationalization and cultural diversity on campus are enormous. International students' engagement and overall institutional satisfaction are closely related to their academic success and development during college. U.S. colleges and universities should not only enroll them on campus but also make good efforts to provide them with sufficient resources and support for their engagement, persistence, and successful graduation (Byrd, 1991). Supporting the engagement of international students and all students requires collaborative work among students, faculty members, staff, school leaders, and policy makers.

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Appendix A

Application for Non-Hunan Subjects Research

INDIANA UNIVERSITY INSTITUTIONAL REVIEW BOARD (IRB)

APPLICATION FOR NON-HUMAN SUBJECTS RESEARCH
(RESEARCH NOT SUBJECT TO FDA OR COMMON RULE DEFINITIONS OF HUMAN SUBJECTS RESEARCH)

Principal Investigator: Nelson Laird, Thomas F

Please type only in the gray boxes. To mark a box as checked, double-click the box, select "checked", and click "OK".

SECTION I: PROJECT TYPE

STOP! **Before completing this form,** refer to the IU Human Subjects Office website for additional information on determining if the activity is considered Human Subjects Research at http://researchadmin.iu.edu/HumanSubjects/hs_submissions.html. Investigators conducting research falling into the categories below do not need to submit an application to the IRB unless specifically requested by a sponsor or collaborator.

☐ **Project meets the definition of human subjects research; however, Indiana University is not considered engaged in this research** in accordance with the Office for Human Research Protections (OHRP) Guidance on Engagement of Institutions in Human Subjects Research available at http://www.hhs.gov/ohrp/humansubjects/guidance/engage08.html.

☐ **Project is NOT a systematic investigation** designed to expand the knowledge base of a scientific discipline or other scholarly field of study through the attempt to answer research question(s) and draw conclusions. Please proceed to Section II.

☒ **IU Researcher(s)** receive de-identified information (not Health Information) from another source or institution which requires confirmation that no IU IRB Review is needed. Please proceed to Section II.

☐ **Research Involving Data on Decedent PHI**. Please indicate that the following criteria are satisfied:
- ☐ The use is solely for research on the identifiable health information of decedents.
- ☐ The PHI sought is necessary for the purposes of the research; and
- ☐ Upon request, the covered entity disclosing the data may require the investigator to provide documentation of the death of the individual(s) about whom information is being sought.

☐ **De-Identified Health Information**. The research involves the use or disclosure of de-identified health information.

This project type may only be selected if the following is true: The health information excludes all of the following: (1) Name; (2) All geographic subdivisions smaller than a state, including street address, city, county, precinct, zip codes if the geographic unit of combining all the same three initial digits contains more than 20,000 people; (3) All elements of dates (except year) for dates directly related to an individual, including birth date, admission date, discharge date, date of death; and all ages over 89 and all elements of dates (including year) indicative of such age, except that such ages and elements may be aggregated in a single category of age 90 or older; (4) Telephone numbers; (5) Fax numbers; (6) Electronic mail addresses; (7) Social security numbers; (8) Medical record numbers; (9) Health plan beneficiary numbers; (10) Account numbers; (11) Certificate/license numbers; (12) Vehicle identifiers and serial numbers, including license plate numbers; (13) Device identifiers and serial numbers; (14) Web universal resource locators (URLs); (15) Internet protocol (IP) address numbers; (16) Biometric identifiers, including finger and voice prints; (17) Full face photographic images and any comparable images; and (18) Any other unique identifying number, character, or code.

☐ **Coded Private Information or Biological Specimens**. The research involves only coded private information or specimens. To qualify for this type of review, the private information or specimens cannot be linked to specific individuals by the investigator(s) either directly or indirectly through coding systems. To qualify, both of the following conditions must be met:

☐ The private information or specimens were **not** collected specifically for this proposed research project through an interaction or intervention with living individuals. **NOTE:** If this condition is not met, then your research involves human subjects and requires a human subjects research submission.

AND

☐ The investigator(s) cannot readily ascertain the identity of the individuals to whom the private information or specimens pertain because: (mark which option(s) applies)
- ☐ The key to decipher the code will be destroyed before the research begins.

☐ The investigator(s) and the holder of the key will enter into an agreement prohibiting the release of the key to the investigator(s) under any circumstances, until the individuals are deceased.
☐ Other. Please explain:_____

For additional information on research with coded private information or biological specimens, please refer to the OHRP Guidance on Research Involving Coded Private Information or Biological Specimens (October 16, 2008) at: http://www.hhs.gov/ohrp/policy/engage08.html.

SECTION II: PROJECT DESCRIPTION

1. Provide a brief description, in lay terms, of the purpose of the proposed project and the procedures to be used.

   For this dissertation study, de-identified data will be received, but the respondents were identified in the original administration. The National Survey of Student Engagement (NSSE) is administered to first-year and senior students using an identified population file forwarded by participating colleges. Researchers receive a cut of de-identified data upon request. NSSE is a research project out of the Center for Postsecondary Research at Indiana University in School of Education. This study meets the criteria for not technically engaging in human subjects research and thus does not need IRB approval; however, the Graduate Studies Office required a memo that this study is approved as non-human subjects research.

2. Provide a list of all data points that will be collected below or attach a data collection sheet.

   The core survey items codebook is attached

Statement of Principal Investigator. By submitting this form, the Principal Investigator acknowledges that he/she has personally reviewed this report and agrees with the above assessment.

Appendix B

NSSE Data Using Agreement

Indiana University Center for Postsecondary Research
Data Sharing Agreement

This Indiana University Center for Postsecondary Research Data Sharing Agreement ("Agreement") defines the parameters for data sharing from the National Survey of Student Engagement ("NSSE") between the Authorized Researchers named below and the Trustees of Indiana University on behalf of the Indiana University Center for Postsecondary Research ("IUCPR"). The terms below are intended to reflect and comply with the existing agreements between NSSE and the institutions that participate in the survey program. Under these participation agreements, NSSE may:

> *"...make data, in which individual institutions or students cannot be identified, available to researchers interested in studying the undergraduate experience... NSSE results specific to each institution and identified as such will not be made public except by mutual agreement between NSSE and the institution."*

RESEARCHERS

The following researchers ("Authorized Researchers") of **Indiana University** may make use of NSSE data pursuant to the terms of this Agreement:

Ms. Rong Wang, Indiana University Bloomington

DATA DESCRIPTION

Under this Agreement, IUCPR will provide the researchers a data file delimited in the following ways ("NSSE Data File"):

Data Source:
NSSE 2015

Variables:
All items from the 2015 NSSE dataset.

Cases:
All cases from the 2015 NSSE dataset. Includes US, eligible, random-or census-administered students who were enrolled at a non-excluded institution.

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Indiana University Center for Postsecondary Research
Data Sharing Agreement

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> *"...make data, in which individual institutions or students cannot be identified, available to researchers interested in studying the undergraduate experience... NSSE results specific to each institution and identified as such will not be made public except by mutual agreement between NSSE and the institution."*

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Ms. Rong Wang, Indiana University Bloomington

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Data Source:
NSSE 2015

Variables:
All items from the 2015 NSSE dataset.

Cases:
All cases from the 2015 NSSE dataset. Includes US, eligible, random-or census-administered students who were enrolled at a non-excluded institution.

NSSE
national survey of
student engagement

PARAMETERS FOR DATA SHARING:

1. IUCPR will provide a single copy of the NSSE Data File solely for non-commercial research by the Authorized Researchers.

2. The NSSE Data File will exclude the Unit ID code from Integrated Postsecondary Educational Data System (IPEDS), any other unique school or student identifiers, and any variables that IUCPR determines reasonably may permit the identification of a participating school or student.

3. The Authorized Researchers will not make any attempt, privately or publicly, to associate elements of the NSSE Data File with the individual institutions or individual students participating in the NSSE, nor will they share the data with anyone else who might do so.

4. In all publications or presentations of data obtained through this agreement, the Authorized Researchers agree to include the following citation: "NSSE data were used with permission from The Indiana University Center for Postsecondary Research."

5. The Authorized Researchers agree to provide to IUCPR a copy of all reports, presentations, analyses, or other materials in which the data given under this Agreement are presented, discussed, or analyzed.

6. The data should be encrypted when not in use by the above researcher and should be destroyed once this particular research project (Dissertation) has been completed. If the researcher needs the data for any longer period than that which is necessary for completing the **Dissertation**, the researcher is required to ask for an extension.

7. Using the data for purposes other than the designated project (**Dissertation**) must be approved by the Indiana University Center for Postsecondary Research.

8. Other parameters: Data must be de-identified.

9. The IUCPR may, by written notification to the Authorized Researchers, terminate this Agreement if it determines, in its sole discretion, that either the Authorized Researchers have breached the terms of this Agreement. In the event that this Agreement is terminated, the Authorized Researchers shall securely destroy all NSSE Data Files and all NSSE Data elements contained in any analyses or other materials created or maintained by Authorized Researchers, within ten (10) days of the receipt of the termination notice.

10. Indiana University will not be liable for any direct, consequential, or other damages, related to the use of the NSSE Data File or any other information delivered by Indiana University or IUCPR in accordance with this Agreement. The authorized researchers shall defend, indemnify, and hold harmless The Trustees of Indiana University, their officers, employees, and agents, with respect to any and all claims, causes of action,

NSSE
national survey of
student engagement

losses, and liabilities, of any kind whatsoever, arising directly or indirectly from the Authorized Researchers' use of the NSSE Data File.

FEES

There are no fees associated with this Agreement.

SIGNATURES

The undersigned hereby consent to the terms of this Agreement and confirm that they have all necessary authority to enter into this Agreement.

For The Trustees of Indiana University:

Alexander C. McCormick
Director,
National Survey of Student Engagement

8/3/2016
Date

Acknowledgment of Authorized Researchers:

Ms. Rong Wang, Indiana University Bloomington

07/25/2016
Date

Dr. Thomas Nelson Laird, Assoc Prof, IU School of Education

8-3-16
Date

_____

Date

_____

Date

Appendix C

NSSE 2015 Web Survey Instrument

This is a facsimile of the U.S. English version of the online NSSE instrument as it appears to the student.
A paper-formatted facsimile of the survey which includes item numbering is available on the
NSSE Web site: ***nsse.iub.edu/html/survey_instruments.cfm***

0% Complete

During the current school year, about how often have you done the following?

	Very often	Often	Sometimes	Never
Asked questions or contributed to course discussions in other ways	○	○	○	○
Prepared two or more drafts of a paper or assignment before turning it in	○	○	○	○
Come to class without completing readings or assignments	○	○	○	○
Attended an art exhibit, play, or other arts performance (dance, music, etc.)	○	○	○	○
Asked another student to help you understand course material	○	○	○	○
Explained course material to one or more students	○	○	○	○
Prepared for exams by discussing or working through course material with other students	○	○	○	○
Worked with other students on course projects or assignments	○	○	○	○
Given a course presentation	○	○	○	○

During the current school year, about how often have you done the following?

	Very often	Often	Sometimes	Never
Combined ideas from different courses when completing assignments	○	○	○	○
Connected your learning to societal problems or issues	○	○	○	○
Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments	○	○	○	○
Examined the strengths and weaknesses of your own views on a topic or issue	○	○	○	○
Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	○	○	○	○
Learned something that changed the way you understand an issue or concept	○	○	○	○
Connected ideas from your courses to your prior experiences and knowledge	○	○	○	○

Screen 1 of 4

During the current school year, about how often have you done the following?

	Very often	Often	Sometimes	Never
Talked about career plans with a faculty member	○	○	○	○
Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	○	○	○	○
Discussed course topics, ideas, or concepts with a faculty member outside of class	○	○	○	○
Discussed your academic performance with a faculty member	○	○	○	○

During the current school year, how much has your coursework emphasized the following?

	Very much	Quite a bit	Some	Very little
Memorizing course material	○	○	○	○
Applying facts, theories, or methods to practical problems or new situations	○	○	○	○
Analyzing an idea, experience, or line of reasoning in depth by examining its parts	○	○	○	○
Evaluating a point of view, decision, or information source	○	○	○	○
Forming a new idea or understanding from various pieces of information	○	○	○	○

During the current school year, to what extent have your instructors done the following?

	Very much	Quite a bit	Some	Very little
Clearly explained course goals and requirements	○	○	○	○
Taught course sessions in an organized way	○	○	○	○
Used examples or illustrations to explain difficult points	○	○	○	○
Provided feedback on a draft or work in progress	○	○	○	○
Provided prompt and detailed feedback on tests or completed assignments	○	○	○	○

During the current school year, about how often have you done the following?

	Very often	Often	Sometimes	Never
Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)	○	○	○	○
Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)	○	○	○	○
Evaluated what others have concluded from numerical information	○	○	○	○

Continue

Save and Return Later Contact Us Frequently Asked Questions

Screen 1 of 4 (continued)

NSSE national survey of student engagement
THE COLLEGE STUDENT REPORT

26% Complete

During the current school year, about how many papers, reports, or other writing tasks of the following lengths have you been assigned? (Include those not yet completed.)

	None	1-2	3-5	6-10	11-15	16-20	More than 20 papers
Up to 5 pages	○	○	○	○	○	○	○
Between 6 and 10 pages	○	○	○	○	○	○	○
11 pages or more	○	○	○	○	○	○	○

During the current school year, about how often have you had discussions with people from the following groups?

	Very often	Often	Sometimes	Never
People of a race or ethnicity other than your own	○	○	○	○
People from an economic background other than your own	○	○	○	○
People with religious beliefs other than your own	○	○	○	○
People with political views other than your own	○	○	○	○

During the current school year, about how often have you done the following?

	Very often	Often	Sometimes	Never
Identified key information from reading assignments	○	○	○	○
Reviewed your notes after class	○	○	○	○
Summarized what you learned in class or from course materials	○	○	○	○

During the current school year, to what extent have your courses challenged you to do your best work?

Not at all ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 Very much

Screen 2 of 4

Which of the following have you done or do you plan to do before you graduate?

	Done or in progress	Plan to do	Do not plan to do	Have not decided
Participate in an internship, co-op, field experience, student teaching, or clinical placement	○	○	○	○
Hold a formal leadership role in a student organization or group	○	○	○	○
Participate in a learning community or some other formal program where groups of students take two or more classes together	○	○	○	○
Participate in a study abroad program	○	○	○	○
Work with a faculty member on a research project	○	○	○	○
Complete a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, portfolio, etc.)	○	○	○	○

About how many of your courses at this institution have included a community-based project (service-learning)?

- ○ All
- ○ Most
- ○ Some
- ○ None

Indicate the quality of your interactions with the following people at your institution.

	Poor 1	2	3	4	5	6	Excellent 7	*Not Applicable*
Students	○	○	○	○	○	○	○	○
Academic advisors	○	○	○	○	○	○	○	○
Faculty	○	○	○	○	○	○	○	○
Student services staff (career services, student activities, housing, etc.)	○	○	○	○	○	○	○	○
Other administrative staff and offices (registrar, financial aid, etc.)	○	○	○	○	○	○	○	○

Continue

Save and Return Later Contact Us Frequently Asked Questions

Screen 2 of 4 (continued)

NSSE national survey of student engagement
THE COLLEGE STUDENT REPORT

46% Complete

How much does your institution emphasize the following?

	Very much	Quite a bit	Some	Very little
Spending significant amounts of time studying and on academic work	○	○	○	○
Providing support to help students succeed academically	○	○	○	○
Using learning support services (tutoring services, writing center, etc.)	○	○	○	○
Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)	○	○	○	○
Providing opportunities to be involved socially	○	○	○	○
Providing support for your overall well-being (recreation, health care, counseling, etc.)	○	○	○	○
Helping you manage your non-academic responsibilities (work, family, etc.)	○	○	○	○
Attending campus activities and events (performing arts, athletic events, etc.)	○	○	○	○
Attending events that address important social, economic, or political issues	○	○	○	○

About how many hours do you spend in a typical 7-day week doing the following?

	Hours per week							
	0	1-5	6-10	11-15	16-20	21-25	26-30	More than 30
Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)	○	○	○	○	○	○	○	○
Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)	○	○	○	○	○	○	○	○
Working for pay **on campus**	○	○	○	○	○	○	○	○
Working for pay **off campus**	○	○	○	○	○	○	○	○
Doing community service or volunteer work	○	○	○	○	○	○	○	○
Relaxing and socializing (time with friends, video games, TV or videos, keeping up with friends online, etc.)	○	○	○	○	○	○	○	○
Providing care for dependents (children, parents, etc.)	○	○	○	○	○	○	○	○
Commuting to campus (driving, walking, etc.)	○	○	○	○	○	○	○	○

Screen 3 of 4

Of the time you spend preparing for class in a typical 7-day week, about how much is on *assigned reading*?

- Very little
- Some
- About half
- Most
- Almost all

How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

	Very much	Quite a bit	Some	Very little
Writing clearly and effectively				
Speaking clearly and effectively				
Thinking critically and analytically				
Analyzing numerical and statistical information				
Acquiring job- or work-related knowledge and skills				
Working effectively with others				
Developing or clarifying a personal code of values and ethics				
Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)				
Solving complex real-world problems				
Being an informed and active citizen				

How would you evaluate your entire educational experience at this institution?

- Excellent
- Good
- Fair
- Poor

If you could start over again, would you go to the *same institution* you are now attending?

- Definitely yes
- Probably yes
- Probably no
- Definitely no

How many majors do you plan to complete? (Do not count minors.)

- One
- More than one

Please enter your major or expected major:

Major

Second Major

Continue

Save and Return Later Contact Us Frequently Asked Questions

Screen 3 of 4 (continued)

NSSE national survey of student engagement
THE COLLEGE STUDENT REPORT

70% Complete

Why do we ask about your personal background?

What is your class level?

- Freshman/first-year
- Sophomore
- Junior
- Senior
- Unclassified

Thinking about this current academic term, are you a full-time student?

- Yes
- No

How many courses are you taking for credit this current academic term?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7 or more

Of these, how many are *entirely online*?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7 or more

What have most of your grades been up to now at this institution?

- A
- A-
- B+
- B
- B-
- C+
- C
- C- or lower

Did you begin college at this institution or elsewhere?

- Started here
- Started elsewhere

Since graduating from high school, which of the following types of schools have you attended *other than* the one you are now attending? (Select all that apply.)

- Vocational or technical school
- Community or junior college
- 4-year college or university other than this one
- None
- Other

What is the highest level of education you ever expect to complete?

- Some college but less than a bachelor's degree
- Bachelor's degree (B.A., B.S., etc.)
- Master's degree (M.A., M.S., etc.)
- Doctoral or professional degree (Ph.D., J.D., M.D., etc.)

What is the highest level of education completed by either of your parents (or those who raised you)?

- Did not finish high school
- High school diploma or G.E.D.
- Attended college but did not complete degree
- Associate's degree (A.A., A.S., etc.)
- Bachelor's degree (B.A., B.S., etc.)
- Master's degree (M.A., M.S., etc.)
- Doctoral or professional degree (Ph.D., J.D., M.D., etc.)

What is your gender identity?

- Man
- Woman
- Another gender identity
- I prefer not to respond

Enter your year of birth (e.g., 1994):

Are you an international student?

- ○ Yes
- ○ No

What is your racial or ethnic identification? (Select all that apply.)

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ White
- ☐ Other
- ☐ I prefer not to respond

Are you a member of a social fraternity or sorority?

- ○ Yes
- ○ No

Which of the following best describes where you are living while attending college?

- ○ Dormitory or other campus housing (not fraternity or sorority house)
- ○ Fraternity or sorority house
- ○ Residence (house, apartment, etc.) *within walking distance* to the institution
- ○ Residence (house, apartment, etc.) *farther than walking distance* to the institution
- ○ None of the above

Are you a student-athlete on a team sponsored by your institution's athletics department?

- ○ Yes
- ○ No

Are you a current or former member of the U.S. Armed Forces, Reserves, or National Guard?

- ○ Yes
- ○ No

Screen 4 of 4 (continued

Have you been diagnosed with any disability or impairment?

- ◯ Yes
- ◯ No
- ◯ I prefer not to respond

Which of the following has been diagnosed? (Select all that apply.)

- ☐ A sensory impairment (vision or hearing)
- ☐ A mobility impairment
- ☐ A learning disability (e.g., ADHD, dyslexia)
- ☐ A mental health disorder
- ☐ A disability or impairment not listed above

Which of the following best describes your sexual orientation? [Question administered per institution request.]

- ◯ Heterosexual
- ◯ Gay
- ◯ Lesbian
- ◯ Bisexual
- ◯ Another sexual orientation
- ◯ Questioning or unsure
- ◯ I prefer not to respond

Continue

Save and Return Later Contact Us Frequently Asked Questions

Screen 4 of 4 (continued)

Appendix D

NSSE Engagement Indicators

NSSE national survey of student engagement

Engagement Indicators & High-Impact Practices

To represent the multiple dimensions of student engagement, NSSE reports on 10 Engagement Indicators calculated from 47 core NSSE items. The indicators are grouped within four themes (adapted from the former NSSE Benchmarks). Additionally, in a separate report, NSSE provides results on six High-Impact Practices, aptly named for their positive associations with student learning and retention.

Engagement Indicators

Engagement Indicators (EIs) provide valuable information about distinct aspects of student engagement by summarizing students' responses to sets of related survey questions. (Component items are listed on the next page.)

Theme	Engagement Indicators
Academic Challenge	Higher-Order Learning
	Reflective & Integrative Learning
	Learning Strategies
	Quantitative Reasoning
Learning with Peers	Collaborative Learning
	Discussions with Diverse Others
Experiences with Faculty	Student-Faculty Interaction
	Effective Teaching Practices
Campus Environment	Quality of Interactions
	Supportive Environment

The EIs and component items were rigorously tested both qualitatively and quantitatively in a multi-year effort that included student focus groups, cognitive interviews, and two years of pilot testing and analysis. As a result, each EI provides valuable, concise, actionable information about a distinct aspect of student engagement.

Scoring EIs

In the *Engagement Indicators* report, each EI is expressed on a 60-point scale. Component items are converted to a 60-point scale (e.g., Never=0, Sometimes=20, Often=40, and Very often=60), then averaged together to compute student-level scores. Institutional EI scores are the weighted averages of student-level scores for each class level. Student-level EI scores are provided to participating institutions in their NSSE data file.

High-Impact Practices

High-Impact Practices (HIPs) represent enriching educational experiences that can be life-changing. They typically demand considerable time and effort, facilitate learning outside of the classroom, require meaningful interactions with faculty and other students, encourage collaboration with diverse others, and provide frequent and substantive feedback. NSSE reports student participation in six HIPs: three for both first-year students and seniors, and three for seniors only (see below).

High-Impact Practices	*First-Year*	*Senior*
Learning community	✓	✓
Service-learning	✓	✓
Research with faculty	✓	✓
Internship or field experience		✓
Study abroad		✓
Culminating senior experience		✓

Note: Survey wording is on the next page.

Scoring HIPs

For each HIP except service-learning, participation is reported as the percentage of students who responded "Done or in progress." For service-learning, it is the percentage of students for whom at least "Some" courses included a community-based project. Thus, a HIP score of 26 means that 26% of respondents participated in the activity.

NSSE founding director George Kuh recommends that all students participate in at least two HIPs over the course of their undergraduate experience—one during the first year and one in the context of their major. The *High-Impact Practices* report summarizes student participation in "1" or "2 or more" HIPs for first-year and senior students and disaggregates results by student and enrollment characteristics.

Sample EI and HIP reports are available on the NSSE website: nsse.indiana.edu/links/institutional_reporting
Summary statistics are also available: nsse.indiana.edu/links/summary_tables

Engagement Indicators and Items

Academic Challenge

Higher-Order Learning

During the current school year, how much has your coursework emphasized the following:

- Applying facts, theories, or methods to practical problems or new situations
- Analyzing an idea, experience, or line of reasoning in depth by examining its parts
- Evaluating a point of view, decision, or information source
- Forming a new idea or understanding from various pieces of information

Reflective & Integrative Learning

During the current school year, how often have you

- Combined ideas from different courses when completing assignments
- Connected your learning to societal problems or issues
- Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments
- Examined the strengths and weaknesses of your own views on a topic or issue
- Tried to better understand someone else's views by imagining how an issue looks from his or her perspective
- Learned something that changed the way you understand an issue or concept
- Connected ideas from your courses to your prior experiences and knowledge

Learning Strategies

During the current school year, how often have you

- Identified key information from reading assignments
- Reviewed your notes after class
- Summarized what you learned in class or from course materials

Quantitative Reasoning

During the current school year, how often have you

- Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)
- Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)
- Evaluated what others have concluded from numerical information

Learning with Peers

Collaborative Learning

During the current school year, how often have you

- Asked another student to help you understand course material
- Explained course material to one or more students
- Prepared for exams by discussing or working through course material with other students
- Worked with other students on course projects or assignments

Discussions with Diverse Others

During the current school year, how often have you had discussions with people from the following groups:

- People from a race or ethnicity other than your own
- People from an economic background other than your own
- People with religious beliefs other than your own
- People with political views other than your own

Experiences with Faculty

Student-Faculty Interaction

During the current school year, how often have you

- Talked about career plans with a faculty member
- Worked with a faculty member on activities other than coursework (committees, student groups, etc.)
- Discussed course topics, ideas, or concepts with a faculty member outside of class
- Discussed your academic performance with a faculty member

Effective Teaching Practices

During the current school year, to what extent have your instructors done the following:

- Clearly explained course goals and requirements
- Taught course sessions in an organized way
- Used examples or illustrations to explain difficult points
- Provided feedback on a draft or work in progress
- Provided prompt and detailed feedback on tests or completed assignments

Campus Environment

Quality of Interactions

Indicate the quality of your interactions with the following people at your institution:

- Students
- Academic advisors
- Faculty
- Student services staff (career services, student activities, housing, etc.)
- Other administrative staff and offices (registrar, financial aid, etc.)

Supportive Environment

How much does your institution emphasize the following:

- Providing support to help students succeed academically
- Using learning support services (tutoring services, writing center, etc.)
- Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)
- Providing opportunities to be involved socially
- Providing support for your overall well-being (recreation, health care, counseling, etc.)
- Helping you manage your nonacademic responsibilities (work, family, etc.)
- Attending campus activities and events (performing arts, athletic events, etc.)
- Attending events that address important social, economic, or political issues

High-Impact Practice Items

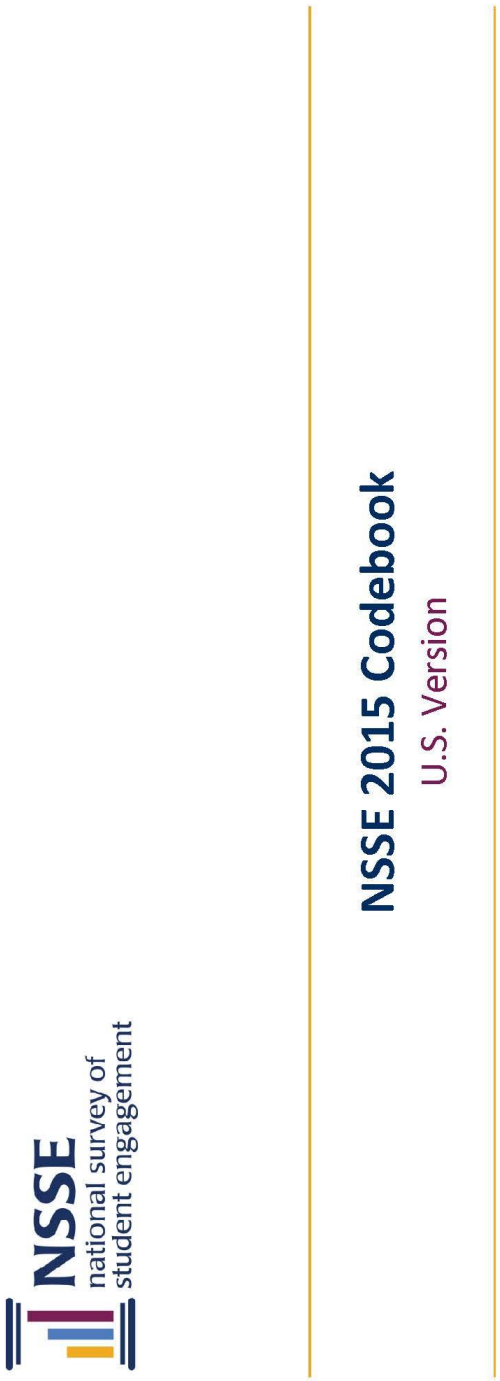
Which of the following have you done or do you plan to do before you graduate?

- Participate in a learning community or some other formal program where groups of students take two or more classes together
- Participate in an internship, co-op, field experience, student teaching, or clinical placement
- Participate in a study abroad program
- Work with a faculty member on a research project
- Complete a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, portfolio, etc.)

About how many of your courses at this institution have included a community-based project (service-learning)?

Appendix E

NSSE 2015 Codebook



Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 1. During the current school year, about how often have you done the following?				
1a.	askquest		Asked questions or contributed to course discussions in other ways	1 = Never 2 = Sometimes 3 = Often 4 = Very often
1b.	drafts		Prepared two or more drafts of a paper or assignment before turning it in	
1c.	unprepared		Come to class without completing readings or assignments	
1d.	attendart		Attended an art exhibit, play or other arts performance (dance, music, etc.)	
1e.	CLaskhelp	CL	Asked another student to help you understand course material	
1f.	CLexplain	CL	Explained course material to one or more students	
1g.	CLstudy	CL	Prepared for exams by discussing or working through course material with other students	
1h.	CLproject	CL	Worked with other students on course projects or assignments	
1i.	present		Given a course presentation	
–	unpreparedr		Reverse code of the variable unprepared	1 = Very often 2 = Often 3 = Sometimes 4 = Never
Question 2. During the current school year, about how often have you done the following?				
2a.	RIintegrate	RI	Combined ideas from different courses when completing assignments	1 = Never 2 = Sometimes 3 = Often 4 = Very often
2b.	RIsocietal	RI	Connected your learning to societal problems or issues	
2c.	RIdiverse	RI	Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments	
2d.	RIownview	RI	Examined the strengths and weaknesses of your own views on a topic or issue	
2e.	RIperspect	RI	Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	
2f.	RInewview	RI	Learned something that changed the way you understand an issue or concept	
2g.	RIconnect	RI	Connected ideas from your courses to your prior experiences and knowledge	

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 3. During the current school year, about how often have you done the following?				
3a.	SFcareer	SF	Talked about career plans with a faculty member	1 = Never 2 = Sometimes 3 = Often 4 = Very often
3b.	SFotherwork	SF	Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	
3c.	SFdiscuss	SF	Discussed course topics, ideas, or concepts with a faculty member outside of class	
3d.	SFperform	SF	Discussed your academic performance with a faculty member	
Question 4. During the current school year, how much has your coursework emphasized the following?				
4a.	memorize		Memorizing course material	1 = Very little 2 = Some 3 = Quite a bit 4 = Very much
4b.	HOapply	HO	Applying facts, theories, or methods to practical problems or new situations	
4c.	HOanalyze	HO	Analyzing an idea, experience, or line of reasoning in depth by examining its parts	
4d.	HOevaluate	HO	Evaluating a point of view, decision, or information source	
4e.	HOform	HO	Forming a new idea or understanding from various pieces of information	
Question 5. During the current school year, to what extent have your instructors done the following?				
5a.	ETgoals	ET	Clearly explained course goals and requirements	1 = Very little 2 = Some 3 = Quite a bit 4 = Very much
5b.	ETorganize	ET	Taught course sessions in an organized way	
5c.	ETexample	ET	Used examples or illustrations to explain difficult points	
5d.	ETdraftfb	ET	Provided feedback on a draft or work in progress	
5e.	ETfeedback	ET	Provided prompt and detailed feedback on tests or completed assignments	
Question 6. During the current school year, about how often have you done the following?				
6a.	QRconclude	QR	Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)	1 = Never 2 = Sometimes 3 = Often 4 = Very often
6b.	QRproblem	QR	Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)	
6c.	QRevaluate	QR	Evaluated what others have concluded from numerical information	

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 7.	**During the current school year, about how many papers, reports, or other writing tasks of the following length have you been assigned? (Include those not yet completed.)**			
7a.	wrshort		Up to 5 pages	1 = None 2 = 1-2 3 = 3-5 4 = 6-10 5 = 11-15 6 = 16-20 7 = More than 20 papers
7b.	wrmed		Between 6 and 10 pages	
7c.	wrlong		11 pages or more	
–	wrshortnum		Estimated number of assigned papers, reports, etc., up to 5 pages (NSSE recode)	0.0 = None 1.5 = 1-2 4.0 = 3-5 8.0 = 6-10 13.0 = 11-15 18.0 = 16-20 23.0 = More than 20 papers
–	wrmednum		Estimated number of assigned papers, reports, etc., between 6 and 10 pages (NSSE recode)	
–	wrlongnum		Estimated number of assigned papers, reports, etc., 11 pages or more (NSSE recode)	
–	wrpages		Estimated pages of assigned writing, recoded and summed by NSSE from *wrshort, wrmed*, and *wrlong* using the midpoints of response ranges and an estimate for unbounded options	
Question 8.	**During the current school year, about how often have you had discussions with people from the following groups?**			
8a.	DDrace	DD	People of a race or ethnicity other than your own	1 = Never 2 = Sometimes 3 = Often 4 = Very often
8b.	DDeconomic	DD	People from an economic background other than your own	
8c.	DDreligion	DD	People with religious beliefs other than your own	
8d.	DDpolitical	DD	People with political views other than your own	
Question 9.	**During the current school year, about how often have you done the following?**			
9a.	LSreading	LS	Identified key information from reading assignments	1 = Never 2 = Sometimes 3 = Often 4 = Very often
9b.	LSnotes	LS	Reviewed your notes after class	
9c.	LSsummary	LS	Summarized what you learned in class or from course materials	
Question 10.	challenge		During the current school year, to what extent have your courses challenged you to do your best work?	1 = Not at all to 7 = Very Much

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 11.	**Which of the following have you done or do you plan to do before you graduate?**			
11a.	intern		Participate in an internship, co-op, field experience, student teaching, or clinical placement	1 = Have not decided 2 = Do not plan to do 3 = Plan to do 4 = Done or in progress
11b.	leader		Hold a formal leadership role in a student organization or group	
11c.	learncom		Participate in a learning community or some other formal program where groups of students take two or more classes together	
11d.	abroad		Participate in a study abroad program	
11e.	research		Work with a faculty member on a research project	
11f.	capstone		Complete a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, portfolio, etc.)	
Question 12.	servcourse		About how many of your courses at this institution have included a community-based project (service-learning)?	1 = None 2 = Some 3 = Most 4 = All
–	HIPsumFY		Number of high-impact practices for first-year students marked 'Done or in progress' (learncom, research) or 'All, Most, or Some' (servcourse).	0 = None 1 = One 2 = Two 3 = Three
–	HIPsumSR		Number of high-impact practices for seniors marked 'Done or in progress' (learncom, research, intern, abroad, and capstone) or 'All, Most, or Some' (servcourse).	0 = None 1 = One 2 = Two 3 = Three 4 = Four 5 = Five 6 = Six

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 13.	**Indicate the quality of your interactions with the following people at your institution.**			
13a.	QIstudent	QI	Students	1 = Poor 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = Excellent 9 = Not applicable (coded as missing)
13b.	QIadvisor	QI	Academic advisors	
13c.	QIfaculty	QI	Faculty	
13d.	QIstaff	QI	Student services staff (career services, student activities, housing, etc.)	
13e.	QIadmin	QI	Other administrative staff and offices (registrar, financial aid, etc.)	
Note: To accommodate SAS users, recodes of question 13 are included in the data file. Variables are recoded to include "Not applicable" as a valid response.				
–	QIstudentR		Students	1 = Poor 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = Excellent 9 = Not applicable
–	QIadvisorR		Academic advisors	
–	QIfacultyR		Faculty	
–	QIstaffR		Student services staff (career services, student activities, housing, etc.)	
–	QIadminR		Other administrative staff and offices (registrar, financial aid, etc.)	
Question 14.	**How much does your institution emphasize the following?**			
14a.	empstudy		Spending significant amounts of time studying and on academic work	1 = Very little 2 = Some 3 = Quite a bit 4 = Very much
14b.	SEacademic	SE	Providing support to help students succeed academically	
14c.	SElearnsup	SE	Using learning support services (tutoring services, writing center, etc.)	
14d.	SEdiverse	SE	Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)	
14e.	SEsocial	SE	Providing opportunities to be involved socially	
14f.	SEwellness	SE	Providing support for your overall well-being (recreation, health care, counseling, etc.)	
14g.	SEnonacad	SE	Helping you manage your non-academic responsibilities (work, family, etc.)	
14h.	SEactivities	SE	Attending campus activities and events (performing arts, athletic events, etc.)	
14i.	SEevents	SE	Attending events that address important social, economic, or political issues	

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 15. About how many hours do you spend in a typical 7-day week doing the following?				
15a.	tmprep		Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)	1 = 0 Hours per week 2 = 1-5 3 = 6-10 4 = 11-15 5 = 16-20 6 = 21-25 7 = 26-30 8 = More than 30
15b.	tmcocurr		Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)	
15c.	tmworkon		Working for pay **on campus**	
15d.	tmworkoff		Working for pay **off campus**	
15e.	tmservice		Doing community service or volunteer work	
15f.	tmrelax		Relaxing and socializing (time with friends, video games, TV or videos, keeping up with friends online, etc.)	
15g.	tmcare		Providing care for dependents (children, parents, etc.)	
15h.	tmcommute		Commuting to campus (driving, walking, etc.)	
–	tmprephrs		Estimated hours: *tmprep* recoded by NSSE using the midpoints of response ranges and an estimate for unbounded options.	0 = 0 hrs 3 = 1-5 hrs 8 = 6-10 hrs 13 = 11-15 hrs 18 = 16-20 hrs 23 = 21-25 hrs 28 = 26-30 hrs 33 = More than 30 hrs
–	tmcocurrhrs		Estimated hours: *tmcocurr* recoded by NSSE using the midpoints of response ranges and an estimate for unbounded options.	
–	tmworkonhrs		Estimated hrs: *tmworkon* recoded by NSSE using the midpoints of response ranges and an estimate for unbounded options.	
–	tmworkoffhrs		Estimated hours: *tmworkoff* recoded by NSSE using the midpoints of response ranges and an estimate for unbounded options.	
–	tmservicehrs		Estimated hours: *tmservice* recoded by NSSE using the midpoints of response ranges and an estimatefor unbounded options.	
–	tmrelaxhrs		Estimated hours: *tmrelax* recoded by NSSE using the midpoints of response ranges and an estimate for unbounded options.	
–	tmcarehrs		Estimated hours: *tmcare* recoded by NSSE using the midpoints of response ranges and an estimate for unbounded options.	
–	tmcommutehrs		Estimated hours: *tmcommute* recoded by NSSE using the midpoints of response ranges and an estimate for unbounded options.	
–	tmworkhrs		Estimated number of hrs working for pay recoded and summed by NSSE from *tmworkonhrs* and *tmworkoffhrs* using the response range midpoints and an estimate for unbounded options.	

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 16.	reading		Of the time you spend preparing for class in a typical 7-day week, about how much is on *assigned reading*?	1 = Very little 2 = Some 3 = About half 4 = Most 5 = Almost all
–	tmreadinghrs		Estimated number of hours reading calculated by NSSE, multiplying *tmprephrs* by a proportion of *reading* (Very little=.10; Some=.25; About half=.50; Most=.75; Almost all=.90).	
–	tmreadinghrscol		NSSE recode of *tmreadinghrs*	1 = 0 hrs 2 = More than zero, up to 5 hrs 3 = More than 5, up to 10 hrs 4 = More than 10, up to 15 hrs 5 = More than 15, up to 20 hrs 6 = More than 20, up to 25 hrs 7 = More than 25 hrs
Question 17.	**How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?**			
17a.	pgwrite		Writing clearly and effectively	1 = Very little 2 = Some 3 = Quite a bit 4 = Very much
17b.	pgspeak		Speaking clearly and effectively	
17c.	pgthink		Thinking critically and analytically	
17d.	pganalyze		Analyzing numerical and statistical information	
17e.	pgwork		Acquiring job- or work-related knowledge and skills	
17f.	pgothers		Working effectively with others	
17g.	pgvalues		Developing or clarifying a personal code of values and ethics	
17h.	pgdiverse		Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)	
17i.	pgprobsolve		Solving complex real-world problems	
17j.	pgcitizen		Being an informed and active citizen	

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 18.	evalexp		How would you evaluate your entire educational experience at this institution?	1 = Poor 2 = Fair 3 = Good 4 = Excellent
Question 19.	sameinst		If you could start over again, would you go to the *same institution* you are now attending?	1 = Definitely no 2 = Probably no 3 = Probably yes 4 = Definitely yes
Question 20.				
20a.	MAJnum		How many majors do you plan to complete? (Do not count minors.)	1 = One major 2 = More than one major
20b.	MAJfirst		Please enter your major or expected major: *[Note: item was only given if respondent selected "One major" on item 20a.]*	Write-in response
	MAJsecond		Please enter up to two majors or expected majors (do not enter minors): *[Note: item was only given if respondent selected "More than one major" on item 20a.]*	Write-in response -9 = Survey did not include this question
20c.	MAJfirstcode		First or expected major (NSSE's code for MAJfirst) *[Note: item was only given if the student's write-in response on item 20b (MAJfirst) was unrecognizable by NSSE's lookup table or if 20b was skipped]*	See page 10 for full list of major categories
	MAJsecondcode		Second major (NSSE's code for MAJsecond) *[Note: item was only given if the student's write-in response on item 20b (MAJsecond) was unrecognizable by NSSE's lookup table or if item 20b was skipped]*	

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
20c.			Full list of NSSE's major categories for *MAJfirstcode* and *MAJsecondcode*	

Arts & Humanities
1 = Arts, fine and applied
2 = Architecture
3 = Art history
4 = English (language and literature)
5 = French (language and literature)
6 = Spanish (language and literature)
7 = Other language and literature
8 = History
9 = Humanities (general)
10 = Music
11 = Philosophy
12 = Religion
13 = Theater or drama
14 = Other fine and performing arts
15 = Other humanities

Biological Science, Agriculture, & Natural Resources
16 = Biology (general)
17 = Agriculture
18 = Biochemistry or biophysics
19 = Biomedical science
20 = Botany
21 = Cell and molecular biology
22 = Environmental science/studies
23 = Marine science
24 = Microbiology or bacteriology
25 = Natural resources and conservation
26 = Natural science
27 = Neuroscience
28 = Physiology and developmental biology
29 = Zoology
30 = Other agr. and natural resources
31 = Other biological sciences

Physical Science, Mathematics, & Computer Science
32 = Physical sciences (general)
33 = Astronomy
34 = Atmospheric sciences (meteorology)
35 = Chemistry
36 = Computer science
37 = Earth science (including geology)
38 = Mathematics
39 = Physics
40 = Statistics
41 = Other physical sciences

Social Sciences
42 = Social sciences (general)
43 = Anthropology
44 = Economics
45 = Ethnic studies
46 = Gender studies
47 = Geography
48 = International relations
49 = Political science
50 = Psychology
51 = Sociology
52 = Other social sciences

Business
53 = Accounting
54 = Business administration
55 = Entrepreneurial studies
56 = Finance
57 = Hospitality and tourism
58 = International business
59 = Management
60 = Management information systems
61 = Marketing
62 = Organizational leadership or behavior
63 = Supply chain and operations
64 = Other business

Communications, Media, & Public Relations
65 = Communications (general)
66 = Broadcast communications
67 = Journalism
68 = Mass communications and media studies
69 = Public relations and advertising
70 = Speech
71 = Telecommunications
72 = Other communications

Education
73 = Education (general)
74 = Business education
75 = Early childhood education
76 = Elementary, middle school education
77 = Mathematics education
78 = Music or art education
79 = Physical education
80 = Secondary education
81 = Social studies education
82 = Special education
83 = Other education

Engineering
84 = Engineering (general)
85 = Aero-, astronautical engineering
86 = Bioengineering
87 = Biomedical engineering
88 = Chemical engineering
89 = Civil engineering
90 = Computer engineering and technology
91 = Electrical or electronic engineering
92 = Industrial engineering
93 = Materials engineering
94 = Mechanical engineering
95 = Petroleum engineering
96 = Software engineering
97 = Other engineering

Health Professions
98 = Allied health
99 = Dentistry
100 = Health science
101 = Health technology (medical, dental, laboratory)
102 = Healthcare administration and policy
103 = Kinesiology
104 = Medicine
105 = Nursing
106 = Nutrition and dietetics
107 = Occupational safety and health
108 = Occupational therapy
109 = Pharmacy
110 = Physical therapy
111 = Rehabilitation sciences
112 = Speech therapy
113 = Veterinary science
114 = Other health professions

Social Service Professions
115 = Criminal justice
116 = Criminology
117 = Forensics
118 = Justice administration
119 = Law
120 = Military science
121 = Public administration, policy
122 = Public safety and emergency management
123 = Social work
124 = Urban planning

Other majors (not categorized)
125 = Computer information systems
126 = Family and consumer studies
127 = General studies
128 = Information systems
129 = Information technology
130 = Liberal arts and sciences
131 = Multi, Interdisciplinary studies
132 = Network security and systems
133 = Other computer science and technology
134 = Parks, recreation, leisure studies, sports management
135 = Professional studies (general)
136 = Technical, vocational studies
137 = Theological studies, ministry
138 = Other, not listed
999 = Undecided, undeclared
998 = Unrecognized write-in
-9 = Student did not receive this question (coded as missing; applicable for MAJsecondcode only)

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
–	MAJFself		NSSE-created flag for students who self-selected their major or first major from the full list (see pg. 10)	0 = Did not self-select 1 = Self-selected
–	MAJSself		NSSE-created flag for students who self-selected their second major from the full list (see pg. 10)	0 = Did not self-select 1 = Self-selected -9 = Student did not receive this question (coded as missing)
–	MAJfirstcol		Recoded write-in major variable MAJfirst into one of eleven related-major categories	1 = Arts and Humanities 2 = Biological Sciences, Agriculture, and Natural Resources 3 = Physical Sciences, Mathematics, and Computer Science 4 = Social Sciences 5 = Business 6 = Communications, Media, and Public Relations 7 = Education 8 = Engineering 9 = Health Professions 10 = Social Service Professions 11 = All other 999 = Undecided, undeclared -9 = Student did not receive this question (coded as missing; applicable for MAJsecondcol only)
–	MAJsecondcol		Recoded write-in major variable MAJsecond into one of eleven related-major categories	
Question 21.	class		What is your class level?	1 = Freshman/first-year 2 = Sophomore 3 = Junior 4 = Senior 5 = Unclassified
Question 22.	fulltime		Thinking about this current academic term, are you a full-time student?	0 = No 1 = Yes

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 23.				
23a.	coursenum		How many courses are you taking for credit this current academic term?	0 = 0 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7 or more
23b.	onlinenum		Of these, how many are *entirely online* ?	0 = 0 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7 or more
–	onlinecrscol		Collapsed recode of how many courses are taken entirely online	1 = No courses taken online 2 = Some courses taken online 3 = All courses taken online
Question 24.	grades		What have most of your grades been up to now at this institution?	1 = C- or lower 2 = C 3 = C+ 4 = B- 5 = B 6 = B+ 7 = A- 8 = A
Question 25.	begincol		Did you begin college at this institution or elsewhere?	0 = Started here 1 = Started elsewhere

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 26.	**Since graduating from high school, which of the following types of schools have you attended *other than* the one you are now attending? (Select all that apply.)**			
26a.	attend_voc		Vocational or technical school	0 = Not selected 1 = Selected
26b.	attend_com		Community or junior college	
26c.	attend_col		4-year college or university other than this one	
26d.	attend_none		None	
26e.	attend_other		Other	
Question 27.	edaspire		What is the highest level of education you ever expect to complete?	1 = Some college but less than a bachelor's degree 2 = Bachelor's degree (B.A., B.S., etc.) 3 = Master's degree (M.A., M.S., etc.) 4 = Doctoral or professional degree (Ph.D., J.D., M.D., etc.)
Question 28.	parented		What is the highest level of education completed by either of your parents (or those who raised you)?	1 = Did not finish high school 2 = High school diploma/G.E.D. 3 = Attended college but did not complete degree 4 = Associate's degree (A.A., A.S., etc.) 5 = Bachelor's degree (B.A., B.S., etc.) 6 = Master's degree (M.A., M.S., etc.) 7 = Doctoral or professional degree (Ph.D., J.D., M.D., etc.)
–	firstgen		First-generation status (level of parental/guardian education is less than a bachelor's degree)	0 = No 1 = Yes
Question 29.	genderid		What is your gender identity?	1 = Man 2 = Woman 3 = Another gender identity 9 = Prefer not to respond
–	genderid_txt		Another gender identity, please specify:	Write-in response

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 30.	birthyear		Enter your year of birth (e.g., 1994): 19[ ]	Write-in response
–	age		Age (Recoded from variable birthyear)	
–	agecat		Age category	1 = 19 or younger 2 = 20-23 3 = 24-29 4 = 30-39 5 = 40-55 6 = Over 55
Question 31.				
31a.	internat		Are you an international student?	0 = No 1 = Yes
31b.	country		What is your country of citizenship? *[Note: item was only given if repondent selected 'Yes' to item 31a]*	To see full list of countries by region, visit: nsse.indiana.edu/html/data_codebooks.cfm
–	countrycol		NSSE recode of country into eight categories	1 = Africa Sub-Saharan 2 = Asia 3 = Canada 4 = Europe 5 = Latin America and Caribbean 6 = Middle East and North Africa 7 = Oceania 8 = Unknown region/uncoded -9 = Student did not receive this question

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 32. What is your racial or ethnic identification? (Select all that apply.)				
32a.	re_amind		American Indian or Alaska Native	0 = Not selected 1 = Selected
32b.	re_asian		Asian	
32c.	re_black		Black or African American	
32d.	re_latino		Hispanic or Latino	
32e.	re_pacific		Native Hawaiian or Other Pacific Islander	
32f.	re_white		White	
32g.	re_other		Other	
32f.	re_pnr		I prefer not to respond	
–	re_all		Racial/ethnic background based on re_amind through re_pnr where each student is represented only once. One through seven represent students who selected only one racial/ethnic identification; eight represents students who selected more than one racial/ethnic identification.	1 = American Indian or Alaska Native 2 = Asian 3 = Black or African American 4 = Hispanic or Latino 5 = Native Hawaiian or Other Pacific Islander 6 = White 7 = Other 8 = Multiracial 9 = I prefer not to respond

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Question 33.	greek		Are you a member of a social fraternity or sorority?	0 = No 1 = Yes
Question 34.	living		Which of the following best describes where you are living while attending college?	1 = Dormitory or other campus housing (not fraternity/sorority house) 2 = Fraternity or sorority house 3 = Residence (house, apartment, etc.) *within* walking distance of the institution 4 = Residence (house, apartment, etc.) *farther than* walking distance to the institution 5 = None of the above
Question 35.	athlete		Are you a student-athlete on a team sponsored by your institution's athletics department?	0 = No 1= Yes
Question 36.	veteran		Are you a current or former member of the U.S. Armed Forces, Reserves, or National Guard?	0 = No 1 = Yes
Question 37.				
37a.	disability		Have you been diagnosed with any disability or impairment?	0 = No 1 = Yes 9 = I prefer not to respond
37b.	**Which of the following have been diagnosed? (Select all that apply)** *[Note: item was only given if respondent either selected "Yes" on item 37a.]*			
	dis_sense		A sensory impairment (vision or hearing)	0 = Not selected 1 = Selected -9 = Student did not receive this question (coded as missing)
	dis_mobility		A mobility impairment	
	dis_learning		A learning disability (e.g., ADHD, dyslexia)	
	dis_mental		A mental health disorder	
	dis_other		A disability or impairment not listed above	

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
–	disability_all		Students' disability identification based on disability and dis_sense through dis_other where each student is represented only once. 1 through 5 represent students who selected only one disability or impairment; 6 represents students who selected more than one disability or impairment.	1 = A sensory impairment 2 = A mobility impairment 3 = A learning disability 4 = A mental health disorder 5 = A disability or impairment not listed above 6 = More than one disability or impairment 7 = No disability or impairment 8 = Prefer not to respond
Question 38.	sexorient14		Which of the following best describes your sexual orientation? *[Note: optional item administered per institution request.]*	1 = Heterosexual 2 = Gay 3 = Lesbian 4 = Bisexual 5 = Another sexual orientation 6 = Questioning or unsure 9 = I prefer not to respond -9 = Survey did not include this question (coded as missing)
–	sexorient14_txt		Another sexual orientation, please specify:	Write-in response -9 = Survey did not include this question

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Data Provided by Your Institution				
–	IRsex		Institution-reported: Sex	0 = Female 1 = Male
–	IRrace		Institution-reported: Race or ethnicity	1 = American Indian or Alaska Native 2 = Asian 3 = Black or African American 4 = Hispanic or Latino 5 = Native Hawaiian or Other Pacific Islander 6 = White 7 = Other 8 = Foreign or Nonresident alien 9 = Two or more races/ethnicities 10 = Unknown
–	IRclass		Institution-reported: Class level	1 = Freshman (1st year) 2 = Sophomore (2nd year) 3 = Junior (3rd year) 4 = Senior (4th year) 5 = Other
–	IRftfy		Institution-reported first-time first-year student	0 = No 1 = Yes
–	IRenrollment		Institution-reported: Enrollment status	0 = Not full-time 1 = Full-time
–	studentID		Institution-reported: Student ID	
–	actcomp		Institution-reported: Composite ACT score	
–	satm		Institution-reported: SAT math score	
–	satv		Institution-reported: SAT verbal or critical reading score	
–	satw		Institution-reported: SAT writing score (if newer form of SAT taken)	
–	group1		First school-provided group identifier	
–	group2		Second school-provided group identifier	
–	group3		Third school-provided group identifier	
–	group4		Fourth school-provided group identifier	
–	group5		Fifth school-provided group identifier	

a. Engagement Indicator items. Key to abbreviations on page 21.

Item #	*Variable name*	*EI*[a]	*Variable label*	*Values and labels*
Data Related to Survey Administration				
–	sample		Sample type	1 = Census 2 = Random sample 3 = Requested random oversample (FY/SR only) 4 = Targeted oversample 5 = Locally administered sample or oversample 6 = Experimental oversample
–	eligible		Identifies respondents that met NSSE criteria at time of survey completion	0 = No 1 = Yes
–	modecomp		Mode of completion on The College Student Report	1 = Paper survey 2 = Web survey
–	surveyid		Unique survey number assigned by NSSE	
–	bsurvid		BCSSE survey id	
–	unitid		Institution unit ID (IPEDS or ESIS)	
–	logdate		Date survey returned (paper) or logged in (web)	
–	os_firstLogin		Operating system with which respondent began survey	
–	os_lastLogin		Operating system with which respondent finished survey	
–	browser_firstLogin		Browser with which respondent began survey	
–	browser_lastLogin		Browser with which respondent finished survey	
–	duration		Summation of every page submit in minutes	
Weights				
NSSE creates weights for randomly selected first-year and senior respondents based on part-time/full-time status and sex. Use weights to replicate the frequency column percentages. However, we encourage schools interested in intra-institutional weighting to consider a more sophisticated weighting system that takes into account response rate differences among additional student subpopulations. NSSE's weights are not appropriate for intra-institutional comparisons in most cases as the response rate differences among subgroups may not be the same as the ones that exist institution-wide at your school. Both weights listed below will reproduce your institution's report statistics, but the N's will differ. See NSSE's website for a full discussion about this topic at http://nsse.indiana.edu/html/weighting.cfm.				
–	WEIGHT1		Institution-reported sex and enrollment status for first-year and senior students within an institution. Replicates the original number of respondents for each institution and is used to produce frequency statistics for each institution.	
–	WEIGHT2		Institution-reported sex and enrollment status weight up to population for first-year and senior students within an institution. Multiplies the number of respondents to match the institution's overall population size.	

a. Engagement Indicator items. Key to abbreviations on page 21.

Engagement Indicators

Engagement Indicators are sets of items that have been grouped into ten key dimensions of student engagement, which fit into four themes adapted from the former Benchmarks of Effective Educational Practice. EI scores are calculated for each student and range from 0 to 60. The EI score for an institution is the weighted mean of these student-level scores. For more detailed information about how Engagement Indicators are calculated, visit the NSSE Web site.
nsse.indiana.edu/html/engagementIndicators.cfm

Variable name	*Description*	*Items*
HO	**Higher-Order Learning:** Amount coursework emphasized challenging learning tasks including applying learned information to practical problems, analyzing ideas and experiences, evaluating information from other sources, and forming new ideas from various pieces of information.	**Items 4b-e:** HOapply, HOanalyze, HOevaluate, HOform
RI	**Reflective & Integrative Learning:** How often students made connections with prior knowledge, other courses, and societal issues, took into account diverse perspectives, and reflected on their own views while examining the views of others.	**Items 2a-g:** RIintegrate, RIsocietal, RIdiverse, RIownview, RIperspect, RInewview, RIconnect
LS	**Learning Strategies:** How often students enacted basic strategies for academic success, such as identifying key information in readings, reviewing notes after class, and summarizing course material.	**Items 9a-c:** LSreading, LSnotes, LSsummary
QR	**Quantitative Reasoning:** How often students engaged with numerical and statistical information across the curriculum, and used this information to reach conclusions, examine real-world problems, and evaluate what others have concluded.	**Items 6a-c:** QRconclude, QRproblem, QRevaluate
CL	**Collaborative Learning:** How often students collaborated with others in mastering difficult material by asking for help, explaining material to others, preparing for exams, and working on group projects.	**Items 1e-h:** CLaskhelp, CLexplain, CLstudy, CLproject
DD	**Discussions with Diverse Others:** How often students had discussions with people who differ from themselves in terms of race or ethnicity, economic background, religious belief, or political views.	**Items 8a-d:** DDrace, DDeconomic, DDreligion, DDpolitical
SF	**Student-Faculty Interaction:** How often students had meaningful, substantive interactions with faculty members and advisors, such as talking about career plans, working on committees or student groups, discussing course material outside of class, or discussing their academic performance.	**Items 3a-d:** SFcareer, SFotherwork, SFdiscuss, SFperform
ET	**Effective Teaching Practices:** Amount instructors emphasized student comprehension and learning with clear explanations and organization, use of illustrative examples, and providing formative and effective feedback.	**Items 5a-e:** ETgoals, ETorganize, ETexample, ETdraftfb, ETfeedback
QI	**Quality of Interactions:** How students rated their interactions with important people in their learning environment, including other students, advisors, faculty, student services, and other administrative staff members.	**Items 13a-e:** QIstudent, QIadvisor, QIfaculty, QIstaff, QIadmin
SE	**Supportive Environment:** Amount the institution emphasized help for students to persist and learn through academic support programs, encouraged diverse interactions, and provided social opportunities, campus activities, health and wellness, and support for non-academic responsibilities.	**Items 14b-i:** SEacademic, SElearnsup, SEdiverse, SEsocial, SEwellness, SEnonacad, SEactivities, SEevents

NSSE national survey of student engagement

International Student Country of Citizenship

Alphabetical

Starting in 2015 students who responded "Yes" to "Are you an international student?" on the U. S. version of NSSE were also asked: "What is your country of citizenship?" This list represents the 258 countries presented, and also provides the numeric codes available in the raw data set under the variable 'country.'

1 = Afghanistan
2 = Akrotiri
3 = Albania
4 = Algeria
5 = Andorra
6 = Angola
7 = Anguilla
8 = Antigua & Barbuda
9 = Argentina
10 = Armenia
11 = Aruba
12 = Ashmore & Cartier Islands
13 = Australia
14 = Austria
15 = Azerbaijan
16 = Bahamas
17 = Bahrain
18 = Bangladesh
19 = Barbados
20 = Bassas Da India
21 = Belarus
22 = Belgium
23 = Belize
24 = Benin
25 = Bermuda
26 = Bhutan
27 = Bolivia
28 = Bosnia & Herzegovina
29 = Botswana
30 = BouvetIsland
31 = Brazil
32 = British Indian Ocean Territory
33 = British Virgin Islands
34 = Brunei
35 = Bulgaria
36 = Burkina Faso
37 = Burma
38 = Burundi
39 = Cambodia
40 = Cameroon
41 = Canada
42 = Cape Verde
43 = Cayman Islands
44 = Central African Republic
45 = Chad
46 = Chile
47 = China
48 = Christmas Island
49 = Clipperton Island
50 = Cocos (Keeling) Islands
51 = Colombia
52 = Comoros
53 = Congo (Brazzaville)
54 = Congo (Kinshasa)
55 = Cook Islands
56 = Coral Sea Islands
57 = Costa Rica
58 = Cote D Ivoire
59 = Croatia
60 = Cuba
61 = Curacao
62 = Cyprus
63 = Czech Republic
64 = Denmark
65 = Dhekelia
66 = Djibouti
67 = Dominica
68 = Dominican Republic
69 = Ecuador
70 = Egypt
71 = El Salvador
72 = Equatorial Guinea
73 = Eritrea
74 = Estonia
75 = Ethiopia
76 = Etorofu, Hamomai, Kunashiri, & Shikotan Islands
77 = Europa Island
78 = Falkland Islands (Islas Malvinas)
79 = Faroe Islands
80 = Fiji
81 = Finland
82 = France
83 = French Guiana
84 = French Polynesia
85 = French Southern & Antarctic Lands
86 = Gabon
87 = Gambia
88 = Gaza Strip
89 = Georgia
90 = Germany
91 = Ghana
92 = Gibraltar
93 = Glorioso Islands
94 = Greece
95 = Greenland
96 = Grenada
97 = Guadeloupe
98 = Guatemala
99 = Guernsey
100 = Guinea
101 = Guinea-Bissau
102 = Guyana
103 = Haiti
104 = Heard & McDonald Islands
105 = Honduras
106 = Hong Kong
107 = Hungary
108 = Iceland
109 = India
110 = Indonesia
111 = Iran
112 = Iraq
113 = Ireland
114 = Isle of Man
115 = Israel
116 = Italy
117 = Jamaica
118 = Jan Mayen
119 = Japan
120 = Jersey
121 = Jordan
122 = Juan De Nova Island
123 = Kazakhstan
124 = Kenya
125 = Kiribati
126 = Kosovo
127 = Kuwait
128 = Kyrgyzstan
129 = Laos
130 = Latvia
131 = Lebanon
132 = Lesotho
133 = Liberia
134 = Libya
135 = Liechtenstein
136 = Lithuania
137 = Luxembourg
138 = Macau
139 = Macedonia
140 = Madagascar
141 = Malawi
142 = Malaysia
143 = Maldives
144 = Mali
145 = Malta
146 = Marshall Islands
147 = Martinique
148 = Mauritania
149 = Mauritius
150 = Mayotte
151 = Mexico
152 = Micronesia, Federated States of
153 = Moldova
154 = Monaco
155 = Mongolia
156 = Montenegro
157 = Montserrat
158 = Morocco
159 = Mozambique
160 = Namibia
161 = Nauru
162 = Nepal
163 = Netherlands
164 = Neutral Zone
165 = New Caledonia
166 = New Zealand
167 = Nicaragua
168 = Niger
169 = Nigeria
170 = Niue
171 = Norfolk Island
172 = North Korea
173 = Norway
174 = Oman
175 = Pakistan
176 = Palau
177 = Panama
178 = Papua New Guinea
179 = Paracel Islands
180 = Paraguay
181 = Peru
182 = Philippines
183 = Pitcairn Islands
184 = Poland
185 = Portugal
186 = Qatar
187 = Reunion
188 = Romania
189 = Russia
190 = Rwanda
191 = Saint Barthelemy
192 = Saint Helena, Ascension, & Tristan Da Cunha
193 = Saint Lucia
194 = Saint Martin
195 = Samoa
196 = San Marino
197 = Sao Tome & Principe
198 = Saudi Arabia
199 = Senegal
200 = Serbia
201 = Seychelles
202 = Sierra Leone
203 = Singapore
204 = Sint Maarten
205 = Slovakia
206 = Slovenia
207 = Solomon Islands
208 = Somalia
209 = South Africa
210 = South Georgia & the South Sandwich Islands
211 = South Korea
212 = South Sudan
213 = Spain
214 = Spratly Islands
215 = Sri Lanka
216 = St Kitts & Nevis
217 = St Pierre & Miquelon
218 = St Vincent & the Grenadines
219 = Stateless
220 = Sudan
221 = Suriname
222 = Svalbard
223 = Swaziland
224 = Sweden
225 = Switzerland
226 = Syria
227 = Taiwan
228 = Tajikistan
229 = Tanzania
230 = Thailand
231 = Timor-Leste
232 = Togo
233 = Tokelau
234 = Tonga
235 = Trinidad & Tobago
236 = Tromelin Island
237 = Tunisia
238 = Turkey
239 = Turkmenistan
240 = Turks & Caicos Islands
241 = Tuvalu
242 = Uganda
243 = Ukraine
244 = United Arab Emirates
245 = United Kingdom
246 = Unknown
247 = Uruguay
248 = Uzbekistan
249 = Vanuatu
250 = Vatican City
251 = Venezuela
252 = Vietnam
253 = Wallis & Futuna Islands
254 = West Bank
255 = Western Sahara
256 = Yemen
257 = Zambia
258 = Zimbabwe

-9 = Student did not receive this question

Source: Version 6.15 of the Student and Exchange Visitor Information System (SEVIS), developed by the Student and Exchange Visitor Program (SEVP), within the U.S. Department of Homeland Security.

NSSE national survey of student engagement

International Student Country of Citizenship

By Region

Starting in 2015 students who responded "Yes" to "Are you an international student?" on the U. S. version of NSSE were also asked: "What is your country of citizenship?" This list represents the 258 countries presented, and also provides the numeric codes available in the raw data set under the variable 'country.'

Africa Sub-Saharan
6 = Angola
20 = Bassas Da India
24 = Benin
29 = Botswana
36 = Burkina Faso
38 = Burundi
40 = Cameroon
42 = Cape Verde
44 = Central African Republic
45 = Chad
52 = Comoros
53 = Congo (Brazzaville)
54 = Congo (Kinshasa)
58 = Cote D Ivoire
66 = Djibouti
72 = Equatorial Guinea
73 = Eritrea
75 = Ethiopia
77 = Europa Island
86 = Gabon
87 = Gambia
91 = Ghana
93 = Glorioso Islands
100 = Guinea
101 = Guinea-Bissau
122 = Juan De Nova Island
124 = Kenya
132 = Lesotho
133 = Liberia
140 = Madagascar
141 = Malawi
144 = Mali
148 = Mauritania
149 = Mauritius
150 = Mayotte
159 = Mozambique
160 = Namibia
168 = Niger
169 = Nigeria
187 = Reunion
190 = Rwanda
192 = Saint Helena, Ascension, & Tristan Da Cunha
197 = Sao Tome & Principe
199 = Senegal
201 = Seychelles
202 = Sierra Leone
208 = Somalia
209 = South Africa
212 = South Sudan
220 = Sudan
223 = Swaziland
229 = Tanzania
232 = Togo
236 = Tromelin Island
242 = Uganda
255 = Western Sahara
257 = Zambia
258 = Zimbabwe

Asia
1 = Afghanistan
18 = Bangladesh
26 = Bhutan
34 = Brunei
37 = Burma
39 = Cambodia
47 = China
76 = Etorofu, Hamomai, Kunashiri, and Shikotan Islands
106 = Hong Kong
109 = India
110 = Indonesia
119 = Japan
123 = Kazakhstan
128 = Kyrgyzstan
129 = Laos
138 = Macau
142 = Malaysia
143 = Maldives
155 = Mongolia
162 = Nepal
172 = North Korea
175 = Pakistan
179 = Paracel Islands
182 = Philippines
203 = Singapore
211 = South Korea
214 = Spratly Islands
215 = Sri Lanka
227 = Taiwan
228 = Tajikistan
230 = Thailand
231 = Timor-Leste
239 = Turkmenistan
248 = Uzbekistan
252 = Vietnam

Canada
41 = Canada

Europe
2 = Akrotiri
3 = Albania
5 = Andorra
10 = Armenia
14 = Austria
15 = Azerbaijan
21 = Belarus
22 = Belgium
28 = Bosnia and Herzegovina
30 = Bouvet Island
35 = Bulgaria
59 = Croatia
62 = Cyprus
63 = Czech Republic
64 = Denmark
65 = Dhekelia
74 = Estonia
79 = Faroe Islands
81 = Finland
82 = France
89 = Georgia
90 = Germany
92 = Gibraltar
94 = Greece
99 = Guernsey
107 = Hungary
108 = Iceland
113 = Ireland
114 = Isle of Man
116 = Italy
118 = Jan Mayen
120 = Jersey
126 = Kosovo
130 = Latvia
135 = Liechtenstein
136 = Lithuania
137 = Luxembourg
139 = Macedonia
145 = Malta
153 = Moldova
154 = Monaco
156 = Montenegro
163 = Netherlands
173 = Norway
184 = Poland
185 = Portugal
188 = Romania
189 = Russia
196 = San Marino
200 = Serbia
205 = Slovakia
206 = Slovenia
213 = Spain
222 = Svalbard
224 = Sweden
225 = Switzerland
238 = Turkey
243 = Ukraine
245 = United Kingdom
250 = Vatican City

Latin America & Caribbean
7 = Anguilla
8 = Antigua and Barbuda
9 = Argentina
11 = Aruba
16 = Bahamas
19 = Barbados
23 = Belize
25 = Bermuda
27 = Bolivia
31 = Brazil
33 = British Virgin Islands
43 = Cayman Islands
46 = Chile
49 = Clipperton Island
51 = Colombia
57 = Costa Rica
60 = Cuba
61 = Curacao
67 = Dominica
68 = Dominican Republic
69 = Ecuador
71 = El Salvador
78 = Falkland Islands (Islas Malvinas)
83 = French Guiana
96 = Grenada
97 = Guadeloupe
98 = Guatemala
102 = Guyana
103 = Haiti
105 = Honduras
117 = Jamaica
147 = Martinique
151 = Mexico
157 = Montserrat
167 = Nicaragua
177 = Panama
180 = Paraguay
181 = Peru
191 = Saint Barthelemy
193 = Saint Lucia
194 = Saint Martin
204 = Sint Maarten
210 = South Georgia and the South Sandwich Islands
216 = St Kitts and Nevis
218 = St Vincent and the Grenadines
221 = Suriname
235 = Trinidad and Tobago
240 = Turks and Caicos Islands
247 = Uruguay
251 = Venezuela

Middle East & North Africa
4 = Algeria
17 = Bahrain
70 = Egypt
88 = Gaza Strip
111 = Iran
112 = Iraq
115 = Israel
121 = Jordan
127 = Kuwait
131 = Lebanon
134 = Libya
158 = Morocco
174 = Oman
186 = Qatar
198 = Saudi Arabia
226 = Syria
237 = Tunisia
244 = United Arab Emirates
254 = West Bank
256 = Yemen

Oceania
12 = Ashmore and Cartier Islands
13 = Australia
48 = Christmas Island
50 = Cocos (Keeling) Islands
55 = Cook Islands
56 = Coral Sea Islands
80 = Fiji
84 = French Polynesia
104 = Heard and McDonald Islands
125 = Kiribati
146 = Marshall Islands
152 = Micronesia, Federated States of
161 = Nauru
165 = New Caledonia
166 = New Zealand
170 = Niue
171 = Norfolk Island
176 = Palau
178 = Papua New Guinea
195 = Samoa
207 = Solomon Islands
233 = Tokelau
234 = Tonga
241 = Tuvalu
249 = Vanuatu
253 = Wallis and Futuna Islands

Unknown region/uncoded
32 = British Indian Ocean Territory
85 = French Southern & Antarctic Lands
95 = Greenland
164 = Neutral Zone
183 = Pitcairn Islands
217 = St Pierre & Miquelon
219 = Stateless
246 = Unknown

-9 = Student did not receive this question

Source: Version 6.15 of the Student and Exchange Visitor Information System (SEVIS), developed by the Student and Exchange Visitor Program (SEVP), within the U.S. Department of Homeland Security.

Appendix F

Descriptive Analysis of Scales, Measure, and Their Individual Items

Frequencies

Learning strategies. Learning Strategies was composed of three items**.** Among first-year students, 81.8% of CISs answered “Often” or “Very Often” to the item that questioned if they identified key information from reading assignments. This proportion was very close to that of first-year U.S. students (81.6%) who responded to the same item. The proportion of first-year CISs (70.6%) who stated that they “Often” or “Very Often” reviewed notes after class was slightly higher than the proportion of their U.S. peers (67.1%) who answered “Often” or “Very Often” to that item. Additionally, the proportion of first-year CISs (68.7%) who claimed “Often” or “Very Often” in response to the item which asked if they summarized what they had learned in class or from course materials, was higher than that of first-year U.S. students (64.6%). The proportions of first-year CISs who answered "Never” to those three effective Learning Strategies items were all lower than those of U.S. first-year students. The proportions of first-year CISs who answered “Very Often” to these items (about employing these three effective Learning Strategies items) were also all lower than the proportions of U.S. first-year students who answered “Very Often” to these same items. Please see Table F1 below for more details.

Among senior CISs, 81.3% of them answered “Often” or “Very Often” to the item that they identified key information from reading assignments; this result was slightly lower than the proportion of senior U.S. students (83.4%) who answered “Often” or “Very Often” to that same item. The proportion of senior CISs (70.0%) who answered “Often” or “Very Often” to the item “reviewed your notes after class” was higher than the proportion of their senior U.S. peers (63.6%) who claimed “Often” or “Very Often.” Additionally, the proportion of senior CISs

(69.3%) who answered “Often” or “Very Often” to the item “summarized what you learned in class or from course materials” was slightly higher than the proportion of senior U.S. students (66.3%) who answered “Often” or “Very Often” to this item. Similar to the pattern of the employment of effective Learning Strategies among first-year CISs and first-year U.S. students, the proportions of senior CISs who answered "Never” to those three effective Learning Strategies items were all lower than the proportions of senior U.S. students who answered “Never.” The proportions of senior CISs who answered “Very Often” to those three effective Learning Strategies items were also lower than the proportions of senior U.S. students who answered “Very Often.” Please see Table F1 below for more details.

Collaborative learning. Among first-year students, 55.1% of CISs answered “Often” or “Very Often” to the item inquiring if they asked another student to help them understand the course material. That proportion was slightly lower than that of first-year U.S. students (52.5%) who answered “Often” or “Very Often.” The proportion of first-year CISs (56.4%) who answered “Often” or “Very Often” to the item asking if they helped one or more students understand course materials was also lower than the proportion of their U.S. peers (59.4%) who answered “Often” or “Very Often.” Additionally, the proportion of first-year CISs (52.3%) who answered “Often” or “Very Often” to the item “prepared for exams by discussing or working through course material with other students” was slightly higher than that of first-year U.S. students (51.3%). The proportion of first-year CISs (56.6%) who answered “Often” or “Very Often” to the item about working with other students on course projects or assignments was slightly higher than that of first-year U.S. students (55.1%). It is worth noting that the proportions of CISs who expressed “Never” to the above four Collaborative Learning items were all smaller than the proportions of U.S. students who answered “Never” to the same

Collaborative Learning items. In addition, the proportions of first-year CISs who answered "Very Often" to those four Collaborative Learning items were also all lower than the proportions of U.S. first-year students who answered "Very Often" to the same Collaborative Learning items.

Among senior CISs, 51.1% of them answered "Often" or "Very Often" to the item "asked another student to help you understand course material," which was higher than that of senior U.S. students (41.8%) who answered "Often" or "Very Often." The proportion of senior CISs (55.0%) who answered "Often" or "Very Often" to the item "explained course material to one or more students" was lower than the proportion of their senior U.S. peers (59.8%) who answered "Often" or "Very Often" to that item. Additionally, the proportion of senior CISs (49.7%) who answered "Often" or "Very Often" to the item "prepared for exams by discussing or working through course material with other students" was slightly higher than the proportion of senior U.S. students (46.9%) who answered "Often" or "Very Often" to this item. The proportion of senior CISs (66.8%) who answered "Often" or "Very Often" to the item "worked with other students on course projects or assignments" was slightly higher than the proportion of senior U.S. students (65.6%) who answered "Often" or "Very Often" to that item. Similar to the pattern of first-year students, the proportions of senior CISs who expressed "Never" to the above four Collaborative Learning items were all smaller than the proportions of senior U.S. students who answered "Never" to the same Collaborative Learning items. Moreover, the proportions of senior CISs who answered "Very Often" to those four Collaborative Learning items were also all lower than the proportions of U.S. senior students who answered "Very Often" to those same items. Please see more details in Table F1 below.

Student-faculty interaction. Among first-year students, 33.3% of CISs answered "Often" or "Very Often" to the item which asked if they talked about career plans with a faculty

member. That proportion was lower than that of first-year U.S. students (34.9%) who answered "Often" or "Very Often" to this item. The proportion of first-year CISs (33.7%) who answered "Often" or "Very Often" to the item "worked with a faculty member on activities other than coursework (committees, student groups, etc.)" was much higher than the proportion of their first-year U.S. peers (19.8%) who answered "Often" or "Very Often" for that item. Additionally, the proportion of first-year CISs (42.9%) who answered "Often" or "Very Often" to the item "discussed course topics, ideas, or concepts with a faculty member outside of class" was much higher than that of first-year U.S. students (26.7%) who answered "Often" or "Very Often." Finally, the proportion of first-year CISs (37.9%) who answered "Often" or "Very Often" to the item about discussing their academic performance with a faculty member was higher than that of first-year U.S. students (30.5%). It is worth noting that except for the item "talked about career plans with a faculty member," the proportions of first-year CISs who expressed "Never" to the other three Student-faculty Interaction items were all much smaller than the proportions of first-year U.S. students who answered "Never" to the same Student-faculty Interaction items. Noticeably, 25.3% of first-year CISs and 50.0% first-year U.S. students reported that they never worked with a faculty member on activities other than course work. Additionally, 30.5% of first-year U.S. students never discussed course topics, ideas, or concepts with a faculty member outside of class. The proportion of first-year CISs who answered "Very Often" to the items "worked with a faculty member on activities other than coursework," "discussed course topics, ideas, or concepts with a faculty member outside of class," and "discussed your academic performance with a faculty member" were higher than the proportions of first-year U.S. students who answered "Very Often" to those same Student-faculty Interaction items. However, fewer

first-year CISs (9.5%) answered “Very Often” to the item “talked about career plans with a faculty member” than did their first-year U.S. peers (12.0%).

Among senior students, 39.1% of CISs answered “Often” or “Very Often” to the item about whether they had talked about career plans with a faculty member. That proportion was lower than that of senior U.S. students (44.8%) who answered “Often” or “Very Often” to the item about discussing career plans with a faculty member. The proportion of senior CISs (36.7%) who answered “Often” or “Very Often” to the item “worked with a faculty member on activities other than coursework (committees, student groups, etc.)” was much higher than the proportion of their senior U.S. peers (28.2%) who also answered “Often” or “Very Often” to that item. Additionally, the proportion of senior CISs (42.8%) who answered “Often” or “Very Often” to the item “discussed course topics, ideas, or concepts with a faculty member outside of class” was higher than that of senior U.S. students (35.0%) who answered “Often” or “Very Often” for this same item. The proportion of senior CISs (39.4%) who answered “Often” or “Very Often” to the item about discussing academic performance with a faculty member was higher than that of senior U.S. students (34.3%). The proportions of senior CISs who expressed “Never” in response to the above four Student-faculty Interaction items were all smaller than the proportions of senior U.S. students who answered “Never” to those same Student-faculty Interaction items. It is worth noting that 43.3% of senior U.S. students never “worked with a faculty member on activities other than coursework,” whereas 19.4% of senior CISS never did so. Additionally, 25.7% of senior U.S. students never “discussed course topics, ideas, or concepts with a faculty member outside of class,” whereas 11.3% of senior CISs never did. The proportions of senior CISs who answered “Very Often” to those four Student-faculty Interaction items were also all lower than

the proportions of U.S. senior students who answered “Very Often” to those same items. Please see more details in Table F1 below.

Table F1

Frequencies of Learning Strategies, Collaborative Learning, and Student-faculty Interaction Individual Items

		First-year				Senior			
		CISs		U.S. Students		CISs		U.S. Students	
		Count	%	Count	%	Count	%	Count	%
Learning Strategies									
Identified key information from reading assignments	Never	3	.3%	1,349	1.5%	3	.3%	2,535	1.9%
	Sometimes	202	17.9%	15,610	16.9%	187	18.4%	19,704	14.8%
	Often	562	49.7%	39,077	42.3%	506	49.9%	50,341	37.7%
	Very often	363	32.1%	36,288	39.3%	319	31.4%	60,982	45.7%
Reviewed your notes after class	Never	13	1.2%	4,296	4.7%	18	1.8%	9,712	7.3%
	Sometimes	317	28.3%	26,075	28.3%	285	28.2%	38,841	29.2%
	Often	463	41.3%	30,284	32.9%	436	43.2%	40,208	30.2%
	Very often	329	29.3%	31,475	34.2%	271	26.8%	44,465	33.4%
Summarized what you learned in class or from course materials	Never	23	2.1%	5,605	6.1%	13	1.3%	8,713	6.6%
	Sometimes	320	29.1%	26,698	29.2%	293	29.4%	35,857	27.2%
	Often	454	41.3%	32,359	35.4%	449	45.0%	45,063	34.2%
	Very often	301	27.4%	26,623	29.2%	243	24.3%	42,306	32.1%
Collaborative Learning									
Asked another student to help you understand course material	Never	48	4.3%	7,617	8.3%	53	5.3%	17,443	13.1%
	Sometimes	456	40.6%	36,189	39.2%	439	43.6%	60,252	45.2%
	Often	414	36.8%	31,243	33.9%	368	36.5%	36,073	27.1%
	Very often	206	18.3%	17,170	18.6%	147	14.6%	19,538	14.7%
Explained course material to one or more students	Never	31	2.8%	3,822	4.2%	29	2.9%	6,368	4.8%
	Sometimes	459	40.8%	33,455	36.4%	421	42.1%	47,194	35.5%
	Often	441	39.2%	35,907	39.0%	386	38.6%	49,642	37.3%
	Very often	193	17.2%	18,791	20.4%	164	16.4%	29,883	22.5%
Prepared for exams by discussing or working through course material with other students	Never	97	8.6%	12,629	13.7%	75	7.4%	23,857	17.9%
	Sometimes	440	39.0%	32,395	35.1%	434	42.9%	47,032	35.2%
	Often	398	35.3%	27,852	30.2%	332	32.8%	35,468	26.6%
	Very often	192	17.0%	19,491	21.1%	171	16.9%	27,133	20.3%
Worked with other students on course projects or assignments	Never	50	4.5%	6,074	6.6%	26	2.6%	7,805	5.9%
	Sometimes	437	38.9%	35,358	38.3%	310	30.6%	38,087	28.6%
	Often	427	38.1%	32,754	35.5%	407	40.2%	46,111	34.6%
	Very often	208	18.5%	18,061	19.6%	269	26.6%	41,394	31.0%
Student-faculty Interaction									
Talked about career plans with a faculty member	Never	228	20.1%	17,667	19.2%	115	11.4%	22,079	16.6%
	Sometimes	528	46.6%	42,324	45.9%	499	49.5%	51,458	38.6%
	Often	269	23.8%	21,082	22.9%	277	27.5%	33,532	25.2%
	Very often	107	9.5%	11,074	12.0%	117	11.6%	26,142	19.6%

Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	Never	285	25.3%	45,914	50.0%	195	19.4%	57,537	43.3%
	Sometimes	462	41.0%	27,781	30.2%	441	43.9%	37,874	28.5%
	Often	281	24.9%	11,759	12.8%	253	25.2%	20,895	15.7%
	Very often	99	8.8%	6,453	7.0%	115	11.5%	16,550	12.5%
Discussed course topics, ideas, or concepts with a faculty member outside of class	Never	147	13.0%	28,051	30.5%	114	11.3%	34,111	25.7%
	Sometimes	497	44.1%	39,287	42.8%	463	45.9%	52,251	39.3%
	Often	347	30.8%	16,701	18.2%	305	30.3%	28,613	21.5%
	Very often	137	12.1%	7,844	8.5%	126	12.5%	17,903	13.5%
Discussed your academic performance with a faculty member	Never	167	14.8%	20,846	22.7%	122	12.2%	29,140	21.9%
	Sometimes	532	47.2%	42,936	46.8%	485	48.4%	58,108	43.8%
	Often	311	27.6%	18,990	20.7%	283	28.2%	28,641	21.6%
	Very often	116	10.3%	8,981	9.8%	112	11.2%	16,874	12.7%

Means, Standard Deviations, and Effect Sizes

The means, standard deviations of individual items of these three engagement indicators (Learning Strategies, Collaborative Learning, and Student-faculty Interaction) and the Overall Institutional Satisfaction measure were also calculated, respectively. Independent-samples *t*-tests and Cohen's *d* effect sizes were used to examine the differences between CISs and U.S. students in each engagement indicator and the Overall Institutional Satisfaction measure. Additionally, independent-samples *t*-tests and Cohen's *d* effect sizes were also used to examine the differences in each individual item of the above three engagement indicators and the Overall Institutional Satisfaction measure between CISs and U.S. The engagement and overall institutional satisfaction of first-year and senior students in CIS groups and U.S. student groups were examined separately.

When reporting and interpreting Cohen's *d* effect sizes, it is essential to provide and consider various contexts of study. Cohen (1988) reluctantly provided the rule of thumb for descriptors (Small, $d = .2$; Medium, $d = .5$; and Large, $d = .8$). These descriptors have been widely used by scholars. However, based on an empirical study of 984 institutions that participated in the 2013 and 2014 NSSEs, Rocconi and Gonyea's (2015) paper recommended new cutoffs for interpreting Cohen's effect sizes when examining NSSE Engagement indicators,

High-Impact Practices, and student engagement data. Rocconi and Gonyea (2015) proposed to use .1, .3, and .5 to examine the effect sizes for NSSE Engagement Indicators, which are more adequate for interpreting NSSE results.

This study employed Cohen's rules of thumb (.2, .5, and .8) for interpreting effect sizes when examining the effect sizes of individual items in each Engagement Indicator (e.g. Learning Strategies, Collaborative Learning, and Student-faculty Interaction). However, when examining the effect sizes of each Engagement Indicator as a scale, the cutoffs for interpreting effect sizes proposed by Rocconi and Gonyea (2015) (.1, .3, and .5) were used.

Learning strategies. The mean and standard deviation of each item in the Learning Strategies scale were calculated among first-year CISs and first-year U.S. students, and among senior CISs and senior U.S. students. Based on the independent-samples *t*-test results, CISs had a lower mean score than U.S. students in "identified key information from reading assignments" among both first-year ($p < .01$) and senior students ($p < .001$). Cohen's effect size values (First-year: $d = -.08$; Senior: $d = -.19$) suggested a low effect size (Cohen, 1988). Senior CISs had a higher mean score than senior U.S. students in "reviewed your notes after class" ($p < .05$). Cohen's effect size value ($d = .06$) suggested a low effect size (Cohen, 1988). First-year CISs had a higher mean score in "summarized what you learned in class or from course materials" than that of first-year U.S. students ($p < .01$). Cohen's effect size value ($d = .07$) suggested a low effect size (Cohen, 1988). More details can be found in Table F2.

An independent-samples *t*-test was conducted to compare the Learning Strategies scale between first-year CISs and first-year U.S. students, and then between senior CISs and senior U.S. students. Although the mean score of first-year CISs in Learning Strategies ($M = 40.39$) was slightly higher than that of first-year U.S. students ($M = 40.23$), the mean difference was not

statistically significant. Additionally, no significant difference was found in the Learning Strategies mean score between senior CISs and senior U.S. students, although senior CISs (M = 39.97) had a slightly lower score than that of senior U.S. students (M = 40.55). More details can be found in Table F2.

Collaborative learning. The mean and standard deviation of each item in the Collaborative Learning scale were calculated among first-year CISs and first-year U.S. students, and among senior CISs and senior U.S. students. Based on the independent-samples t-test results, CISs had a higher mean score than U.S. students for the item that "asked another student to help you understand course material" among both first-year students ($p < .05$) and senior students ($p < .001$). Cohen's effect size values suggested a low effect size for both first-year and senior students (First-year: d = .07; Senior: d = .19) (Cohen, 1988). CISs had a lower mean score than U.S. students for the item that "explained course material to one or more students" among both first-year students ($p < .05$) and senior students ($p < .001$). Cohen's effect size values suggested a low effect size for both first-year and senior students (First-year: d = -.06; Senior: d = -.11) (Cohen, 1988). Senior CISs had a higher mean score than senior U.S. students in the item "prepared for exams by discussing or working through course material with other students" ($p < .001$). Cohen's effect size value (d = .10) suggested a low effect size (Cohen, 1988). More details can be found in Table F2.

An independent-samples t-test was conducted to compare the Collaborative Learning scale between first-year CISs and first-year U.S. students, and then between senior CISs and senior U.S. students. The Collaborative Learning mean score for senior CISs (M = 33.86) was significantly higher than the score of senior U.S. students (M = 33.04) ($p < .05$). Cohen's effect

size value (d = .06) suggested a low effect size (Rocconi & Gonyea, 2015). More details can be found in Table F2.

Student-faculty interaction. The mean and standard deviation of each item in the Student-faculty Interaction scale were calculated among first-year CISs and first-year U.S. students, and among senior CISs and senior U.S. students. Based on the independent-samples *t*-test results, CISs had a lower mean score than U.S. students in "talked about career plans with a faculty member" for both first-year students ($p < .05$) and senior students ($p < .01$). Cohen's effect size values suggested a low effect size for both first-year and senior students (First-year: d = -.06; Senior: d = -.09) (Cohen, 1988). CISs had a higher mean score than U.S. students in the item "worked with a faculty member on activities other than coursework (committees, student groups, etc.)" for both first-year students ($p < .001$) and senior students ($p < .001$). Cohen's effect size values suggested a low to medium effect size for both first-year and senior students (First-year: d = .44; Senior: d = .30) (Cohen, 1988). CISs also had a higher mean score than U.S. students in the item "discussed course topics, ideas, or concepts with a faculty member outside of class" for both first-year students ($p < .001$) and senior students ($p < .001$). Cohen's effect size values suggested a low to medium effect size for both first-year and senior students (First-year: d = .41; Senior: d = .22) (Cohen, 1988). Finally, CISs also had a higher mean score than U.S. students in the item "discussed your academic performance with a faculty member" for both first-year students ($p < .001$) and senior students ($p < .001$). Cohen's effect size values suggested a low effect size for both first-year and senior students (First-year: d = .18; Senior: d = .14) (Cohen, 1988).

An independent-samples *t*-test was conducted to compare Student-faculty Interaction scale between first-year CISs and first-year U.S. students, and then between senior CISs and

senior U.S. students. The Student-faculty Interaction mean score for first-year CISs (M = 25.71) was higher than that of first-year U.S. students (M = 21.32) ($p < .001$). Cohen's effect size value (d = .30) suggested a medium effect size (Rocconi & Gonyea, 2015). The Student-faculty Interaction mean score for senior CISs (M = 27.60) was higher than that of senior U.S. students (M = 24.62) ($p < .001$). Cohen's effect size value (d = .18) suggested a low effect size (Rocconi & Gonyea, 2015). More details can be found in Table F2.

Table F2

Scales, Component Items, and Independent-Samples T-Test of Engagement Indicators between CIS and U.S. Students

During the current school year, about how often have you done the following? (1 = Never, 2 = Sometimes, 3 = Often, 4 = Very often)	*First-year*						*Senior*					
	CISs		*U.S. Students*		*Sig.*	*ES*[a]	*CISs*		*U.S. Students*		*Sig.*	*ES*[a]
	Mean	*SD*	*Mean*	*SD*			*Mean*	*SD*	*Mean*	*SD*		
Learning Strategies (First-year students' α = .770; Senior students' α = .783)	40.39	13.03	40.23	14.18		.01	39.97	12.34	40.55	14.81		-.04
Identified key information from reading assignments	3.14	.70	3.19	.76	**	-.08	3.12	.70	3.27	.78	***	-.19
Reviewed your notes after class	2.99	.79	2.97	.90		.02	2.95	.79	2.90	.95	*	.06
Summarized what you learned in class or from course materials	2.94	.80	2.88	.90	**	.07	2.92	.76	2.92	.92		.01
Collaborative Learning (First-year students' α = .816; Senior students' α = .808)	33.50	13.11	33.26	14.17		.02	33.86	12.56	33.04	14.58	*	.06
Asked another student to help you understand course material	2.69	.82	2.63	.88	*	.07	2.60	.80	2.43	.89	***	.19
Explained course material to one or more students	2.71	.78	2.76	.82	*	-.06	2.69	.78	2.77	.85	***	-.11
Prepared for exams by discussing or working through course material with other students	2.61	.87	2.59	.97		.02	2.59	.85	2.49	1.01	***	.10
Worked with other students on course projects or assignments	2.71	.82	2.68	.86		.03	2.91	.82	2.91	.91		.01
Student-faculty Interaction (First-year students' α = .832; Senior students' α= .855)	25.71	14.62	21.32	14.75	***	.30	27.60	14.40	24.62	16.47	***	.18
Talked about career plans with a faculty member	2.23	.88	2.28	.91	*	-.06	2.39	.84	2.48	.99	**	-.09
Worked with a faculty member on activities other than	2.17	.91	1.77	.92	***	.44	2.29	.91	1.97	1.04	***	.30

coursework (committees, student groups, etc.)												
Discussed course topics, ideas, or concepts with a faculty member outside of class	2.42	.86	2.05	.91	***	.41	2.44	.85	2.23	.98	***	.22
Discussed your academic performance with a faculty member	2.33	.85	2.18	.89	***	.18	2.38	.84	2.25	.94	***	.14

Notes: *p<.05, **p<.01, ***p<.001 (two tailed).
a. Effect size.

Overall institutional satisfaction. The mean and standard deviation of each item in the Overall Institutional Satisfaction measure were also calculated among first-year CISs and first-year U.S. students, respectively, and among senior CISs and senior U.S. students. Per the independent-samples *t*-test results among first-year students, both CISs and U.S. students rated their entire educational experiences in their institutions as "Good" or "Excellent." However, first-year CISs rated their entire educational experiences at their institutions lower than did their first-year U.S. peers (p <.001). Cohen's effect size value (d = -.29) suggested a low to medium effect size (Cohen, 1988). When were asked "If you could start over again, would you go to the same institution you are now attending?" on average, both first-year CISs and first-year U.S students indicated at least "Probably yes." First-year CISs had a lower mean score than their first-year U.S. peers in their opinion on starting over from the same institution (p < .001). Cohen's effect size value (d = -.23) suggested a low effect size (Cohen, 1988).

In examining the scores of senior students, CISs had a lower mean score than did U.S. students concerning their entire educational experience (p < .001). Cohen's effect size value (d = -.21) suggested a low effect size (Cohen, 1988). The pattern of senior students' answers to the item "If you could start over again, would you go to the same institution you are now

attending?" was similar to the pattern of the answers from first-year students. On average, both senior CISs and senior U.S. students indicated at least "Probably yes." Senior CISs had a lower mean score than their senior U.S. peers in their opinion on starting over from the same institution ($p < .001$). Cohen's effect size value ($d = -.15$) suggested a low effect size (Cohen, 1988).

An independent-samples *t*-test was conducted to compare the Overall Institutional Satisfaction measure between first-year CISs and first-year U.S. students, and then between senior CISs and senior U.S. students. The mean score of first-year CIS Overall Institutional Satisfaction ($M = 40.69$) was lower than that of first-year U.S. students ($M = 44.61$) ($p < .001$). Cohen's effect size value ($d = -.29$) suggested a low to medium effect size (Cohen, 1988). The mean score of senior CIS Overall Institutional Satisfaction ($M = 42.01$) was lower than that of senior U.S. students ($M = 44.92$) ($p < .001$). Cohen's effect size value ($d = -.20$) suggested a low effect size (Cohen, 1988). The mean differences in Overall Institutional Satisfaction between first-year CISs and first-year U.S. students (mean difference = 3.92) was larger than that between senior CISs and senior U.S. students (mean difference = 2.91). More details can be found in Table F3.

It is worth noting that among both first-year and senior students, CISs had significantly lower satisfaction with their institutions. This finding suggests that U.S. colleges and universities should further investigate the satisfaction of CISs, and even the entire international student group on campuses. By finding out the factors that influence international students' satisfaction, colleges and universities will be able to come up with effective solutions to enhance international students' Overall Institutional Satisfaction. Additionally, the mean difference in Overall Institutional Satisfaction between first-year CISs and first-year U.S.

students was larger than that between senior CISs and senior U.S. students. This finding indicates that senior students may be more involved in collegiate life in the U.S. than first-year CISs, and they may have more opportunities to express their opinions on the resources and support that they have received from their colleges and universities. Therefore, college and universities should understand students' experiences and satisfactions through different channels and in different stages throughout their studies.

Table F3

The Component Items of Overall Institutional Satisfaction Measure and t-tests between CISs and U.S. Students

	First-year						*Senior*			
	CISs		*U.S. students*				*CISs*		*U.S. students*	
	Mean	SD	*Mean*	*SD*	*Sig.*	*Effect Size*	*Mean*	*SD*	*Mean*	*SD*
Overall Institutional Satisfaction (First-year students' α = .753; Senior students' α= .809)	40.69	11.16	44.61	13.65	***	-.29	42.01	12.34	44.92	14.64
How would you evaluate your entire educational experience at this institution? (1= Poor, 2= Fair, 3= Good, 4= Excellent)	3.03	.64	3.23	.77	***	-.29	3.12	.66	3.28	.75
If you could start over again, would you go to the *same institution* you are now attending? (1= Definitely no, 2= Probably no, 3= Probably yes, 4= Definitely yes)	3.04	.68	3.23	.81	***	-.23	3.09	.73	3.22	.85

Notes: *p<.05, **p<.01, ***p<.001 (two tailed).

Curriculum Vitae

Rong (Lotus) Wang

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EDUCATION

Indiana University, School of Education, Bloomington, IN, USA. *2012 - 2017*
Ph.D. Candidate, Higher Education and Student Affairs program, GPA: 3.8/4.0
Graduate Certificate in Institutional Research
Minor: Global Studies
Dissertation: *A Comparison of Engagement and Overall Institutional Satisfaction between Chinese International and Domestic Students in the United States*

University of Pennsylvania, Graduate School of Education, Philadelphia, PA, USA. *2010 - 2012*
Master of Science in Education, Higher Education program, GPA: 3.6/4.0

Sias International University, **Business School**, Xinzheng, Henan, P. R. China, *2005 - 2009*
Bachelor of Economics, International Economics and Trade program, GPA: 3.5/4.0

RESEARCH INTERESTS

- College teaching and learning
- Faculty development and student engagement
- Institutional Research
- Higher education administration

RESEARCH EXPERIENCES

Research Project Associate, Center for Postsecondary Research (CPR), Indiana University, Bloomington, IN, USA. *Aug. 2012 – June, 2017*

- Working on various projects with data of National Survey of Student Engagement (NSSE), Faculty Survey of Student Engagement (FSSE), Faculty Survey of Student Engagement for Graduate Student Instructors (FSSE-G), Beginning College Survey of Student Engagement (BCSSE), Strategic National Arts Alumni Project (SNAAP), and Law School Survey of Student Engagement (LSSSE)
- Collaborating with Research Analysts and peer Research Project Associates (RPA) in data management, data analysis, report production, and specialized analysis requests from clients
- Coordinating the RPA team to respond to the need-based requests from Research Scientists for data analysis and checking, and reviewing and testing survey items
- Leading the RPA team in creating, updating, and checking data codebooks and report templates, participating in NSSE *Annual Results* writing, designing, and checking
- Created experimental item set *Teaching International Students* for the 2016 FSSE. It was distributed among 14 FSSE participating institutions, yielding 844 faculty respondents.
- Led several research projects using both quantitative and qualitative methods and presented at national and international conferences
- Maintained survey registrations interface for BCSSE, communicated with the campus

project managers of BCSSE survey participating schools, organized paper survey shipping, and checked school reports

Serving on the Graduate Learning Goals, Expectations, and Outcomes committee at the CPR for the external review, communicating with graduate students and student supervisors for feedback, and facilitating the planning and implementations for 2016-17 academic year

Planning and facilitating workshops for graduate students at the CPR, such as Report Boot Camp and data safety training

RESEARCH AND PRESENTATIONS (PEER REVIEWED)

Wang, R., & Middendorf, J. (2017, November). *Transforming STEM faculty through evidence-based teaching and growth mindset*. Poster will be presented at the annual Professional and Organizational Development Network Conference, Montreal, Québec, Canada.

Wang, R., & BrckaLorenz, A. (2017, April). *A comparison of international students' engagement and faculty perceptions of international student engagement.* Paper presented at the 2017 American Educational Research Association Annual Conference in San Antonio, TX, USA.

Wang, R., & BrckaLorenz, A. (2016, November). *Engaging international students through effective teaching strategies.* Paper presented at the annual Professional and Organizational Development Network Conference, Louisville, KY, USA.

BrckaLorenz, A., Cole, J. S., & **Wang, R.** (2016, November). *A comparison of STEM students' expectations for engagement and faculty teaching practice.* Presented at the 2016 Transforming STEM Undergraduate Education Conference organized by Association of American Colleges & Universities, Boston, MA, USA.

Wang, R., Zilvinskis, J. & Ribera, A. K. (2016, May). *Involving online students in High-Impact Practices*. Poster presented at the 2016 Association of Institutional Research Annual Forum in New Orleans, LA, USA.

Wang, R., BrckaLorenz, A., & Nelson Laird, T. F. (2016, May). *Variations in the instructional behaviors of Graduate Student Instructors*. Poster presented at the 2016 Association of Institutional Research Annual Forum in New Orleans, LA, USA.

Wang, R., BrckaLorenz, A., & Nelson Laird, T. F. (2016, April). *The teaching practices and time allocation of faculty and graduate student instructors*. Paper presented at the 2016 American Educational Research Association Annual Conference in Washington, DC, USA.

Wang, R., & Ribera, A. K. (2016, April). *Moving students to read: Unpacking the relationship with reflective and integrative learning*. Paper presented at the Annual Meeting of the American Educational Research Association, Washington, DC, USA.

Ribera, A. K. & **Wang, R.** (2015, November). *To read or not to read? Investigating students' reading motivation*. Presentation at the annual Professional and Organizational Development Network Conference, San Francisco, CA, USA.

BrckaLorenz, A., **Wang, R**., & Nelson Laird, T. F. (2015, November). *Graduate student*

instructors, their courses, and the support they need. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Denver, CO, USA.

Zilvinskis, J., **Wang, R.**, & Dumford, A, D. (2015, May). *Latino STEM students in undergraduate research*. Poster presented at the Association of Institutional Research Annual Forum, Denver, CO. USA.

Wang, R., BrckaLorenz, A., & Chiang, Y. (2015, April). *What characteristics predict student-faculty interaction and important relationships with effective educational practice*. Poster presented at the Annual Meeting of the American Educational Research Association, Chicago, IL, USA.

BrckaLorenz, A., Fernandez, S., Peck, L., **Wang, R.**, & Zilvinskis, J. (2014, November). *What matters most to course success: Student and faculty perspectives*. Presentation at the annual Professional and Organizational Development Network Conference, Dallas, TX, USA.

Haeger, H. A., **Wang, R.**, & BrckaLorenz, A. (2014, April). Bridge or barrier: The impact of social media on engagement for first-generation college students. Poster presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA, USA.

Chen, Y., & **Wang, R.** (2013, June). *Beyond the Numbers: International Student Experiences in U.S. Higher Education*. Presentation at the NASPA Assessment & Persistence Conference in Denver, CO, USA.

Wang, R., Dong, Y., Shi, D., Wilmot, H., & Haeger, H. (2013, March). *Measuring Service Learning While Promoting Student Engagement*. Presentation at the 2013 NASPA Annual Conference, Orlando, FL, USA.

Neugebauer, S., & **Wang, R.** (2012, March). *Residential Life: What the United States and China Can Learn From Each Other*. Presentation at the 2012 NASPA Annual Conference, Phoenix, AZ, USA.

TEACHING EXPERIENCES

Indiana University Bloomington, School of Education, Bloomington, IN. USA. *Jan. 2016 - May. 2016*

EDUC-U580 Issues and Problems in Higher Education and Student Affairs Administration

Teaching Assistant for Dr. Danielle M. DeSawal and Dr. Harold (Pete) D. Goldsmith

- Participated in course design, including provided suggestions to syllabus, designed course activities, and recommended relevant literature for this master's level course
- Attended weekly course preparation meetings with Dr. DeSawal and Dr. Goldsmith
- Coordinated the Mock Placement program among 23 student affairs professionals on campus, in order to prepare master's students for the job market; prepared a suggested interview question set for interviewers; arranged 56 interviews for 31 master's students in Higher Education and Student Affairs program
- Facilitated course discussions and activities, graded assignments, and provided prompt feedback to students' weekly presentations, resumes, and electronic portfolios

Shared my research findings, professional experiences, and resources in student affairs with students

Organized and maintained Learning Management System (Canvas) course site

Indiana University Bloomington, School of Education, Bloomington, IN. USA. *May 2015 - July 2015*

EDUC-C750 Research Seminar for Student Engagement

Teaching Assistant for Dr. Alexander C. McCormick

Assisted the professor in course design, updating the course content, and recommending relevant literature for this doctoral level course

Facilitated class discussions, coordinated the invitation of guest speakers, and offered question and answer sessions to students after class

Shared my knowledge and experiences in using large-scale survey data of student engagement with the class, such as the National Survey of Student Engagement (NSSE), Faculty Survey of Student Engagement (FSSE), and Beginning College Survey of Student Engagement (BCSSE)

Provided statistical software (SPSS) training sessions, and recommended SPSS self-learning resources to the class

Helped the professor organize Canvas course site and maintain frequent communications with the class both in person and online

Sias International University, School of Business, Xinzheng, Henan, China, *Aug. 2009 - Aug. 2010*

International Trade Experiment

Instructor (Full-time)

Developed the curriculum for the newly offered course and implemented a Chinese-English bilingual teaching procedure

Promoted students' operational capacities via virtual international trading platform in the economic laboratory

Employed various instructional techniques, such as group work, role playing, and gaming, to create an inclusive and engaging classroom environment

Inspired students to review and synthesize the relevant disciplinary knowledge, such as international trade, marketing, accountant, business negotiation, and international settlement, and put them into practices

Evaluated students' lab assignments on weekly bases and provided prompt feedback on students' lab reports and reflections

Advised students on professional development, graduate school applications, and TOEFL/GRE preparations outside the class

WORKSHOP FACILITATION

BrckaLorenz, A. & **Wang, R.** (March, 2017). *Data Safety Training*. Professional Development Workshops for Graduate Assistants at the Center for Postsecondary Research, Indiana University, Bloomington, IN, USA.

BrckaLorenz, A. & **Wang, R.** (September, 2016). *Report Bootcamp*. Professional Development Workshops for Graduate Assistants at the Center for Postsecondary

Research, Indiana University, Bloomington, IN, USA.

Abas, S., & **Wang, R.** (August, 2016). *Why won't they talk? Getting all your students involved through group activities.* Designed and led the Classroom Climate Workshops for the Fall 2016 Teaching Orientation Workshops for Associate Instructors at Indiana University, facilitated by the Center for Innovative Teaching and Learning, Bloomington, IN, USA.

Wang, R. (August, 2016). *Teaching as an international student.* Facilitated the lunch discussion session *The "real deal" and a meal: Teaching as a graduate student at IUB* for the Fall 2016 Teaching Orientation Workshops for Associate Instructors at Indiana University, Bloomington, IN, USA.

Middendorf, J. & **Wang, R.** (February, 2016). *A discussion of international (and all) students' learning.* Presentation at the Associate Instructors Teaching workshop, facilitated by the Center for Innovative Teaching and Learning and Department of Geography, Indiana University, Bloomington, IN, USA.

Cruz, Y., **Wang, R.** & Middendorf, J. (January, 2016). *A discussion of international (and all) students' learning.* Presentation at the Center for Innovative Teaching and Learning (CITL) faculty workshop, Indiana University, Bloomington, IN, USA.

Wang, R. (November, 2014). *How faculty members can utilize the National Survey of Student Engagement to improve teaching*. Presentation at the Brown Bag Faculty Seminar at the School of Public and Environmental Affairs, facilitated by the Center for Innovative Teaching and Learning (CITL), Indiana University, Bloomington, IN, USA.

GRANTS AND AWARDS

Holmstedt Dissertation Year Fellowship, Indiana University Bloomington, IN, USA, *2016-2017*

Professional and Organizational Development (POD) Network Graduate and Professional Student Development (GPSD) Career Development Award, Louisville, KY, USA, *Nov. 2016*

Indiana University Center for Innovative Teaching and Learning Scholarship of Teaching and Learning Grants, *Understanding the Difference between Learning Behaviors of Chinese and American College Students within the U.S.* (Co-PI, 50%). PI: Greg Kitzmiller. Bloomington, IN, USA, *Nov. 2013*

University of Pennsylvania Graduate and Professional Student Assembly (GAPSA) Conference Travel Grant, Philadelphia, PA, USA, *March 2012*

University of Pennsylvania Graduate School of Education Conference Travel Fund, Philadelphia, PA, USA, March 2012

Sias International University Study Abroad Fellowship, Xinzheng, Henan, P. R. China, *Jun. 2009*

Sias International University Annual Scholarship, Xinzheng, Henan, P. R. China, *2006 - 2007, 2007 - 2008*

Sias Foundation Scholarship, Xinzheng, Henan, China, *Sep. 2006*

PUBLICATIONS (*indicates contributing authorship)

Wang, R., & BrckaLorenz, A. (Accepted). *A comparison of international students' engagement and faculty perceptions of international student engagement.* Manual script submitted to the *Journal of International Students*.

Wang, R. (2017, April 24). How faculty teach: Inside international student engagement in U.S. colleges and universities [Blog post]. Retrieved from https://nssesightings.indiana.edu/2017/04/24/international-student-engagement/

National Survey of Student Engagement (2015). *Psychometric portfolio*. Bloomington, IN: Indiana University Center for Postsecondary Research.*

National Survey of Student Engagement (2015). *NSSE Annual Results 2015: Engagement Insights: Survey Findings on the Quality of Undergraduate Education.* Bloomington, IN: Indiana University Center for Postsecondary Research.*

D'Souza, L., Fleming, J., McWilliams, S., Triest, M. A., & **Wang, R.** (December, 2014). Engaging with faculty to increase your impact as a student affairs professional. S*ynergy*. Retrieved from https://www.naspa.org/images/uploads/kcs/SAPAA_Synergy_2014_December.pdf

National Survey of Student Engagement (2014). *NSSE Annual Results 2014: Bringing the Institution into Focus*. Bloomington, IN: Indiana University Center for Postsecondary Research.*

Wang, R., Triest, M. A., D'Souza, L., McWilliams, S., & Fleming, J. (December, 2013). Embracing service learning as a tool for career development. S*ynergy*. Retrieved from http://www.naspa.org/images/uploads/kcs/SAPAA_Synergy_2013_December.pdf

National Survey of Student Engagement (2013). *NSSE Annual Results 2013: A Fresh Look at Student Engagement*. Bloomington, IN: Indiana University Center for Postsecondary Research.*

Wang, R., D'Souza, L., Bellezza-Watts, A., & Shehane, M.E. (December, 2012). The impact of social media on college students' career searches. S*ynergy*. Retrieved from http://www.naspa.org/kc/sapaa/synergy/2012_December_careersearch.cfm

National Survey of Student Engagement (2012). *NSSE Annual Results 2012: Promoting Student Learning and Institutional Improvement: Lessons from NSSE at 13.* Bloomington, IN: Indiana University Center for Postsecondary Research.*

Shehane, M. E., D'Souza, L., Bellezza-Watts, A., & **Wang, R.** (December, 2011). Advising students with career confusion: The disconnection between major and career. S*ynergy*. Retrieved from http://www.naspa.org/kc/sapaa/synergy/2011_December_career_services.cfm

Wang, R. (2010). The theoretical analysis on international competitiveness of sci-tech enterprises (Ke Ji Xing Qi Ye Guo Ji Jing Zheng Li Li Lun Zong Shu). *Modern Business Trade and Industry*, No. 12, 113-114, Index: 1672-3198(2010)12-0113-02

Gao, B., Wang, F., Zhou, K., Li, W. P., & **Wang, R.** (2009). The Research on the Policy of Developing Cycling Economy in Henan Province (Henan Sheng Fa Zhan Xun Huan Jing Ji De Zheng Ce Yan Jiu). Research topic was sponsored and awarded the second prize by Association of Social Science of Henan Province, China.

PROFESSIONAL EXPERIENCES

Co-Chair of Career Services Working Group, NASPA (Student Affairs Administrators in Higher Education) Knowledge Community on Student Affairs Partnering with Academic Affairs (SAPAA), Bloomington, IN, *March 2013 - March 2015*

- Developed and implemented a recruitment and promotion plan for the working group
- Coordinated regular Career Services Working Group (CSWG) leadership bi-weekly meetings
- Provided guidance and support for CSWG leadership team and facilitated all activities of the CSWG
- Regularly communicated with SAPAA Co-Chairs and collaborated with other working group chairs to increase awareness and outreach

Resource Coordinator, NASPA (Student Affairs Administrators in Higher Education) Knowledge Community on Student Affairs Partnering with Academic Affairs (SAPAA), Philadelphia, PA, USA, *Aug. 2011 - March 2013*

- Facilitated SAPAA Career Services Working Group (CSWG) to enhance conversations and promote professional development opportunities for SAPAA knowledge community members
- Researched and identified effective programs, role models, and other resources for faculty and staff working in career services
- Collaborated with the Technology Coordinator to distribute helpful resources to SAPAA members
- Wrote articles on career services and published them on *Synergy*, the newsletter of the NASPA SAPAA Knowledge Community

NASPA Graduate Associate for the University of Pennsylvania, Philadelphia, PA, USA, *Sep. 2011-Aug. 2012*

- Served as NASPA's primary contact and resource for UPenn students and professionals seeking information on student affairs, created and updated social network sites to promote resources
- Provided NASPA with feedback on what programs and services students need from NASPA through monthly conference calls, exchanged information with 85 NASPA Graduate Associates nationwide
- Utilized multiple channels, such as social network sites, bulletin boards, e-mails and in-person discussions, to promote NASPA events and publicize NASPA announcements to the campus community

Graduate Associate, Sansom Community Services, Residential Services, University of Pennsylvania, Philadelphia, PA, USA. *Aug. 2011- May 2012*

- Worked with a diverse student population at Sansom Place, which houses more than 1,100 residents (approximately 70% were international students; 65% graduate

students, 30% undergraduates, and 5% of university guests and residents of special programs)
- Organized Sansom Liaison Program to update the community on campus events by allocating staff to serve as liaisons to 12 student affairs programs at the University
- Recruited and collaborated with staff members to interview and select new residential staff
- Planned and implemented programs to build a welcoming community for 55 residents of diverse backgrounds
- Designed monthly newsletters and brochures, and created content for communication within residence life

Graduate Assistant, **Sansom Community Services, Residential Services, University of Pennsylvania,** Philadelphia, PA, USA. *Aug. 2010 - May 2011*
- Reviewed and updated 320-page staff manual for the upcoming year
- Managed and facilitated office operations to strengthen management and communication
- Worked closely with the Sansom Residential Coordinator to support residents by creating an agenda for anticipated incidents and reminding staff members to be aware of the potential issues in advance

General Management Intern, Marketing Department, GRADD Education, Henan, China, *Aug. 2008 - Jun. 2009*
- GRADD Education was a consulting company dedicated to promoting college graduates' essential professional skills
- Coordinated weekly staff training, hosted GRADD Campus Meetings, and organized panels made up of Human Resources Managers from Fortune 500 Corporations
- Assessed the GRADD seminars and reported to the Marketing Associate Director
- Worked as the Forum Moderator of GRADD online forum, facilitated discussions on job application strategies
- Cooperated with other interns to host GRADD Weekend Business School for local college students
- Assisted with career counseling including resume and cover letter revising, job search guidance, and mock interviewing

SERVICES

Paper Session Chair, American Educational Research Association, Washington DC, USA, *April 2016*

Program Reviewer, Professional and Organizational Development Network (POD), USA, *March 2016*

Goodwill Ambassador, School of Education, Indiana University, Bloomington, IN, USA, *March, 2013 – July, 2017*

Committee Member, NASPA Assessment and Persistence Conference, USA, *Dec. 2012 - July. 2013*

Program Reviewer, NASPA Annual Conference, USA, *2011, 2012, 2013*

Program Reviewer, NASPA Assessment and Persistence Conference, USA, *2012, 2013*

Committee Member, Graduate School of Education Commencement, University of Pennsylvania, Philadelphia, PA, USA, *Apr. - May 2011*

Committee Member, Graduate School of Education New Student Orientation, **University of Pennsylvania,** Philadelphia, PA, USA, *Aug. - Sep., 2011*

PROFESSIONAL AFFILIATION

NASPA-Student Affairs Administrators in Higher Education, USA, member since 2011.

American Educational Research Association, USA, member since 2014.

Association for Institutional Research, USA, member since 2015.

Professional and Organizational Development Network (POD), USA, member since 2014.